



# Sun Java™ Workstation W1100z and W2100z User Guide

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Sun Microsystems, Inc.  
www.sun.com

Part No. 817-6585-12  
January 2005, Revision A

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# Preface

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The *Sun Java Workstation W1100z and W2100z User Guide* provides a detailed description of the hardware and software applications used to support the Sun Java Workstation W1100z and W2100. This book is intended for system administrators, network administrators, or service technicians who have knowledge of workstation hardware and software.

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## How This Book is Organized

[Chapter 1](#) contains an overview of the Sun Java Workstation W1100z and W2100.

[Chapter 2](#) contains information on troubleshooting the workstations.

[Chapter 3](#) contains information on diagnostics.

[Chapter 4](#) contains information on removing and replacing components.

[Appendix A](#) contains information on system specifications.

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# Typographic Conventions

Typeface*	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. % You have mail.
<b>AaBbCc123</b>	What you type, when contrasted with on-screen computer output	% <b>su</b> Password:
<i>AaBbCc123</i>	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be superuser to do this. To delete a file, type <code>rm filename</code> .

\* The settings on your browser might differ from these settings.

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<http://www.sun.com/service/contacting/>

For online technical support, go to:

<http://www.sun.com/service/online/>

If you want to create an account with <http://www.sun.com>, click on Register under My Online Account on the right.



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## Related Documentation

Application	Title	Part Number
System setup information	<i>Sun Java Workstation W1100z and W2100z Workstations Setup Poster</i>	817-6583-xx
Installation information	<i>Sun Java Workstation W1100z and W2100z Getting Started Guide</i>	817-6584-xx
Safety Information	<i>Sun Java Workstation W1100z and W2100z Safely and Compliance Guide</i>	817-6586-xx
Late-breaking information	<i>Sun Java Workstation W1100z and W2100z Release Notes</i>	817-6587-xx

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<http://www.sun.com/w1100z>

<http://www.sun.com/w2100z>

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# Introduction to the Sun Java Workstation W1100z and W2100z

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The Sun Java Workstation W1100z and W2100z are AMD Opteron processor based systems. The workstations come with one or two AMD 64 Opteron processors preinstalled on the onboard AMD socket 940 receptacles. Up to 16 GB of dual-channel registered ECC 400 DDR SDRAM is available for the two-processor system (four DIMMs per processor). Hard drive capacity includes up to two internal PATA-100 80 GB hard drives or up to four 73 GB Ultra 320 SCSI hard drives.

The Sun Java Workstation W1100z and W2100z are equipped with one AGP8x slot for high-end graphics cards and one 133 MHz and four 100 MHz PCI-X slots. The workstation also includes a Gigabit Ethernet interface, two IEEE 1394 interfaces, five USB 2.0 interfaces, and industry-standard audio interfaces.

The following sections are included in this chapter:

- [Section 1.1, “Features” on page 1-2.](#)
- [Section 1.2, “Operating System and Software” on page 1-3.](#)
- [Section 1.3, “Hardware System Overview” on page 1-5.](#)
- [Section 1.4, “Powering the Workstation On and Off” on page 1-9.](#)
- [Section 1.5, “Customer Orderable Components” on page 1-11.](#)

# 1.1 Features

TABLE 1-1 shows the system's key components.

**TABLE 1-1** Sun Java Workstation W1100z and W2100z Features

Component	Description
CPU	<ul style="list-style-type: none"><li>• One 64-bit AMD Opteron processor (W1100z) or two 64-bit AMD Opteron processors (W2100z). The Sun Java Workstation W1100z is not upgradable to two processors.</li><li>• Processor frequencies: 1.8 GHz and faster</li><li>• Up to 1 MB level 2 cache</li></ul>
Memory	<ul style="list-style-type: none"><li>• Four DIMM slots per processor.</li><li>• Each DIMM socket on board supports 512 MB, 1 GB or 2 GB DDR 400 SDRAM (3.05 cm max. height) modules.</li></ul> <p>Note: For the two-processor configuration, the system supports eight slots and a maximum memory capacity of 16 GB.</p>
Media storage	CD-RW/DVD-ROM and DVD-RW drives
Hard disk drives	Up to four USCSI 320 73 GB drives or up to two PATA100 80 GB drives. Hard drive types cannot be combined.
Power supply	550W PSU
Network I/O	Onboard Broadcom BCM5703ci 10/100/1000BASE-T Gigabit Ethernet controller
PCI I/O	Five PCI bus slots with four separate bus segments <ul style="list-style-type: none"><li>• One half-length 133 MHz PCI-X bus slot</li><li>• One half-length and three full-length 100 MHz PCI-X bus slots</li></ul>
Other I/O	<ul style="list-style-type: none"><li>• One parallel/printer connector</li><li>• Two serial connectors</li><li>• Five USB 2.0 connectors (two on the front and three on the rear of the workstation)</li><li>• Two IEEE 1394 (firewire) connectors</li><li>• Line-in/Line-out jacks</li><li>• Microphone-in jack</li></ul>

---

## 1.2 Operating System and Software

### 1.2.1 Operating System Software

Your Sun Java Workstation W1100z or W2100z system might have Sun Java Desktop, Release 2, with the Solaris or Linux operating system preinstalled. If you do not have an operating system preinstalled on your workstation, you will need to install an operating system of your choosing.

The following operating systems are supported at the time of this document release:

- Red Hat Enterprise Linux 3 WS for x86—32 bit
- Red Hat Enterprise Linux 3 WS for AMD64—64 bit
- Solaris 9 x86 HW Operating Environment (4/04) or latest version—32 bit
- SUSE Linux Operating System (as a part of Sun Java Desktop System, Release 2)
- Windows XP Operating System (WHQL Certified)

Instructions for installing these operating systems can be found in the media sets that come with the operating system software.

The Solaris 9 x86 HW Operating Environment (4/04), or latest version, is included on a DVD shipped with the Sun Java Workstation W1100z or W2100z. Ensure that you use the version of Solaris 9 x86 that comes with the workstation, because it includes the drivers necessary for running Solaris 9 on the Sun Java Workstation W1100z or Sun W2100z.

If you want to run Red Hat Enterprise Linux 3 WS on the Sun Java Workstation W1100z or W2100z, you can order it from the following web site:

<http://www.sun.com/software/linux/index.html>

Support for additional operating systems will be available after the initial release of the Sun Java Workstation W1100z and W2100z. Refer to one of the following URLs for information on the operating systems currently supported:

<http://www.sun.com/w1100z>

<http://www.sun.com/w2100z>

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**Note** – After installing the operating system, refer to the *Sun Java Workstation W1100z and W2100z Getting Started Guide*, 817-6584-xx, for further information on updates and drivers that need to be installed.

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## 1.2.2 Supplemental CD Software

The Sun Java Workstation W1100z and W2100z Supplemental CD, included with the workstation, contains the following software:

- Supplemental drivers to support preinstalled or user-installed operating systems. See the *Sun Java Workstation W1100z and W2100z Getting Started Guide*, 817-6584-xx, for information on installing these drivers.
- Eurosoft Pc-Check diagnostics software, which provides various diagnostics testing options for the Sun Java Workstation W1100z and W2100z. See “Diagnostics” on page 3-1 for more information.

## 1.2.3 Java Desktop System

The Java Desktop System might be preinstalled on your system. If your Sun Java Workstation W1100z or W2100z did not come with the Java Desktop System preinstalled, you can download it from the following site:

<http://www.sun.com/software/javadesktopsystem/get/index.html>

For more information on Java Desktop System for the Sun Java Workstation W1100z and W2100z, refer to the *Sun Java Workstation W1100z and W2100z Getting Started Guide*, 817-6584-xx, or the Java Desktop System, Release 2, documentation at:

<http://docs.sun.com>

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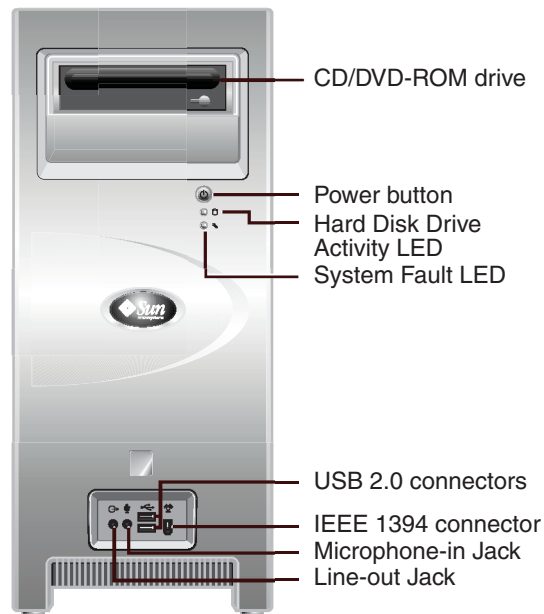
## 1.3 Hardware System Overview

The following sections describe the hardware orientation and features of your Sun Java Workstation W1100z or W2100z.

### 1.3.1 External Components

#### 1.3.1.1 Front and Rear Panels

**FIGURE 1-1** illustrates the front panel of the Sun Java Workstation W1100z and W2100z.



**FIGURE 1-1** Front Panel

FIGURE 1-2 depicts the rear panel of the Sun Java Workstation W1100z and W2100z.

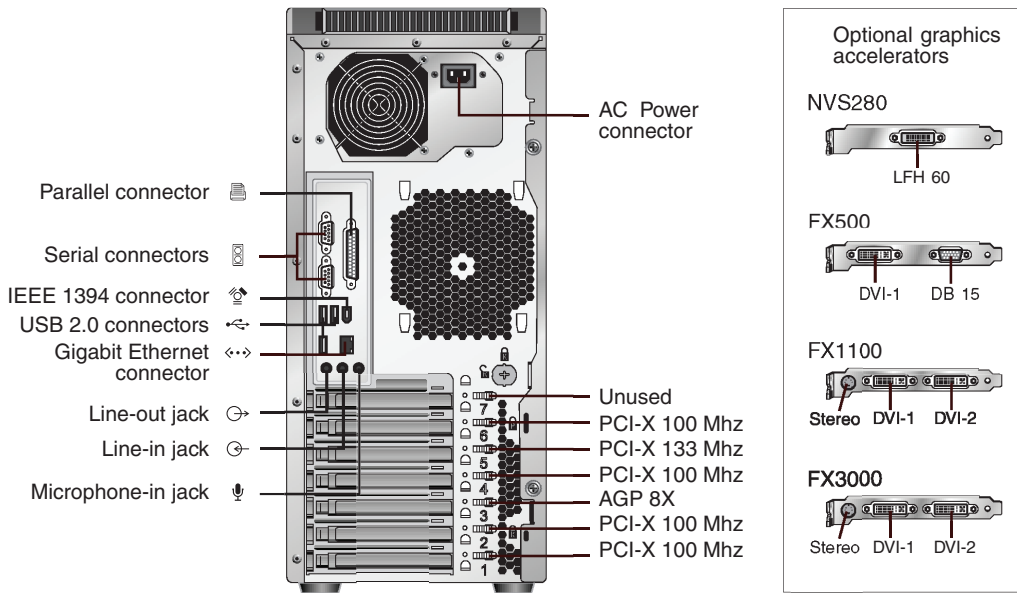


FIGURE 1-2 Rear Panel

### 1.3.1.2 Front Panel LEDs

TABLE 1-2 describes the LEDs on the front panel of the workstation.

TABLE 1-2 Front Panel LEDs

LED	Description
Platform Power	This LED is lit when the platform power is on.
Hard Disk Activity	This LED is lit when there is system hard drive activity.
System Fault	This LED blinks when a severe system fault, such as an over voltage condition or an upper temperature limit, is detected. If this LED is lit, view the DMI event log in the BIOS setup tool for more information on the fault condition.



## 1.3.2 Internal Components

FIGURE 1-3 shows the locations of the components inside the Sun Java Workstation W1100z with a one-processor (1P) configuration.

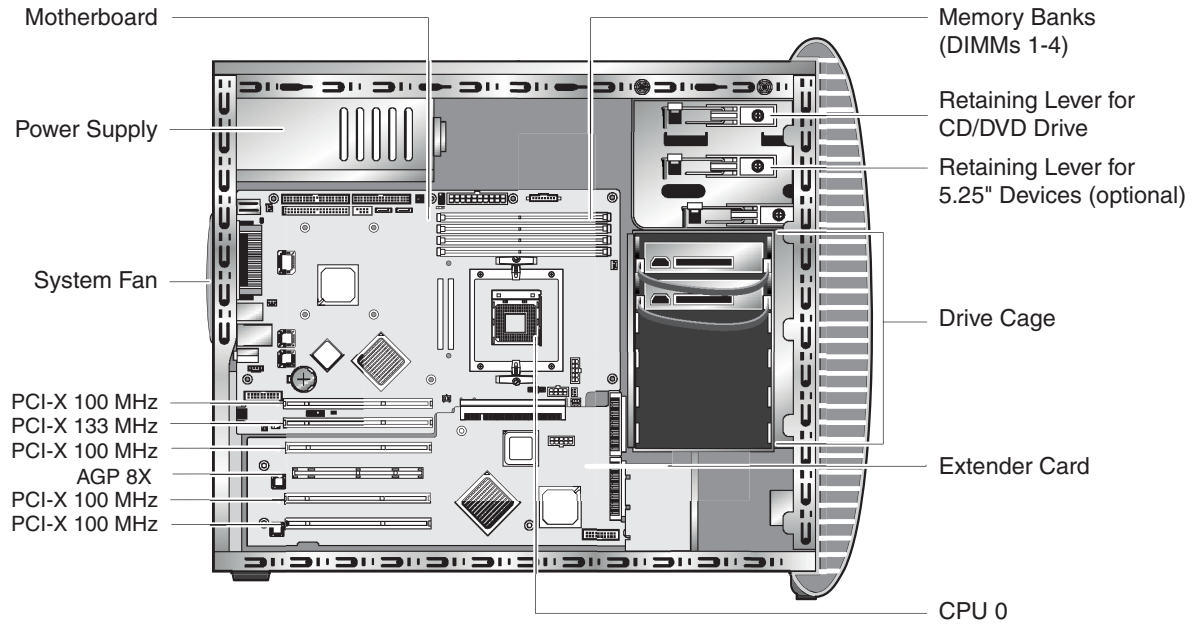


FIGURE 1-3 Sun Java Workstation W1100z System Components

FIGURE 1-4 shows the locations of the components inside the Sun Java Workstation W2100z with a two-processor (2P) configuration.

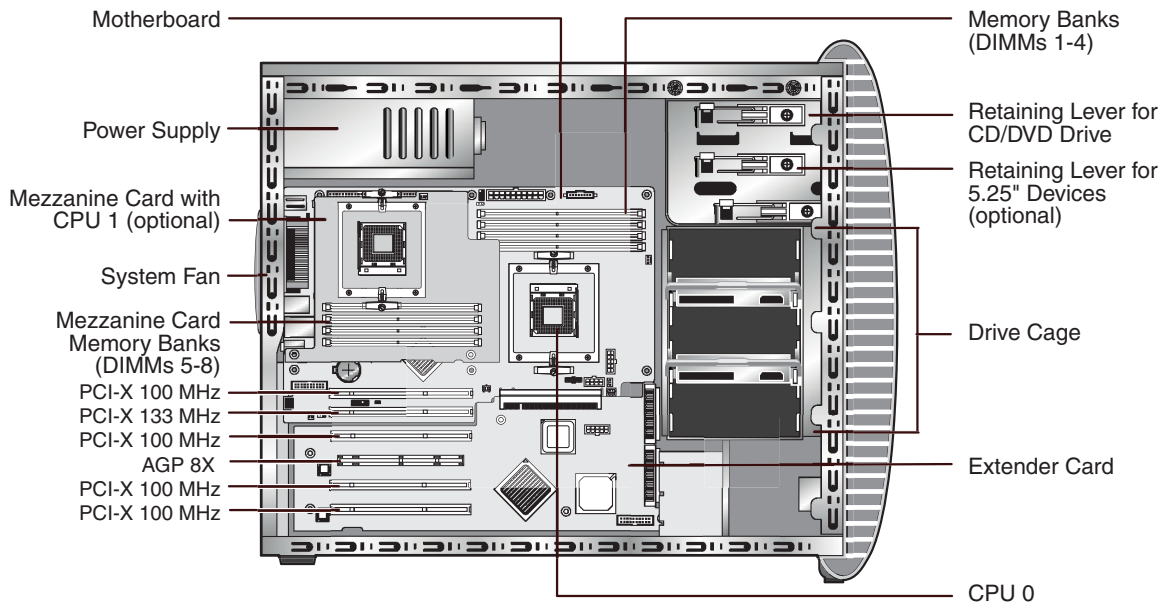


FIGURE 1-4 Sun Java Workstation W2100z System Components

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## 1.4 Powering the Workstation On and Off

### 1.4.1 Powering On the Workstation

After making sure that you have set up the system properly and connected all the required cables as shown in the *Sun Java Workstation W1100z and W2100z Getting Started Guide*, 817-6584-xx, you can now power on your system.

---

**Tip** – If you are installing optional internal components such as additional memory DIMMs, PCI cards, optical drives, or hard drives, install those components before you power on the workstation. See [Chapter 4](#) for remove and replace procedures. If you are not installing optional components, you are ready to power on the workstation.

---

Follow these steps to power up the workstation:

1. **Turn on power to the monitor and to all external devices.**
2. **Press and release the workstation Power button on the front panel** ([FIGURE 1-1](#)).
3. **After several seconds, verify that the platform power LED on the Power button is lit.**

The platform power LED on the Power button lights after the workstation begins the internal booting process ([FIGURE 1-1](#)).

4. **If you are powering on the workstation for the first time, you will need to install the operating system after the system has finished booting.**

See [Section 1.2.1, “Operating System Software”](#) on page 1-3 for more details.

If you need to change the system parameters in the BIOS, press the F2 key during the POST process to access the BIOS Setup Utility.



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**Caution** – Be careful when making changes to the system BIOS, as certain changes can cause your system to malfunction.

---

## 1.4.2 Powering Off the Workstation

1. **Save your data and close any open applications.**
2. **Read all of the following power-off options before powering off the workstation:**
  - Power off the workstation by using the operating system shut down command or menu option.

In most cases, this will power down the operating system, then turn off the power to the workstation.
  - If the workstation power does not shut off through the operating system command or this command is not available, press and release the Power button (location shown in [FIGURE 1-2](#)).

This initiates an orderly shutdown of the operating system and powers off the workstation.

---

**Note** – Use one of the first two options whenever possible to avoid data loss.

---

- If the workstation power does not shut off with one of the first two options press and hold the Power button for approximately 4 seconds.

This shuts down the power to the workstation, but does *not* initiate an orderly shutdown of the system. This method could result in data loss.

If the preceding options fail to power off the workstation, see [Chapter 2, “Troubleshooting”](#) on page 2-1 for more options.

After powering off the workstation, wait at least four seconds before powering on the workstation again.

## 1.4.3 Power Interruptions

If the power to the system is interrupted for less than ten seconds, do the following to ensure that the standby power is completely shut off:

1. **Unplug the AC power cord from the workstation.**
2. **Wait ten or more seconds.**
3. **Plug the power AC cord into the workstation.**
4. **Power on the workstation.**

---

## 1.5 Customer Orderable Components

You can order additional components and replacement parts for the Sun Java Workstation W1100z and W2100z. Some parts are only available for the Sun Java Workstation W1100z, some are only available for the Sun Java Workstation W2100z, and some are available for either system.

Contact your local Sun sales representative for more information. For the most up-to-date component information, see the components list on one of the following web sites:

[http://sunsolve.sun.com/handbook\\_pub/Systems/W1100z/](http://sunsolve.sun.com/handbook_pub/Systems/W1100z/) or

[http://sunsolve.sun.com/handbook\\_pub/Systems/W2100z/](http://sunsolve.sun.com/handbook_pub/Systems/W2100z/)

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**Note** – The Sun Java Workstation W1100z and W2100z are configured with either EIDE (ATA) or SCSI drives. You cannot mix different types of drives in one system.

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# Troubleshooting

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Before troubleshooting your specific workstation problem, collect the following information:

- What events occurred prior to the failure?
- Was any hardware or software modified or installed?
- Was the workstation recently installed or moved?
- How long has the workstation exhibited symptoms?
- What is the duration or frequency of the problem?

After you have assessed the problem and noted your current configuration and environment, you can choose from several ways to troubleshoot your workstation:

- Visually inspect your system as described in [Section 2.1, “Visual Inspection” on page 2-2](#).
- View the troubleshooting procedures in [Section 2.2, “Troubleshooting Procedures” on page 2-3](#) to see if any of them solve the problem.
- Execute diagnostics test as described in [Chapter 3, “Diagnostics” on page 3-1](#).
- If you are not able to resolve the problem, contact Sun technical support. Support numbers are shown in [Section 2.3, “Technical Assistance” on page 2-5](#).

---

## 2.1 Visual Inspection

Improperly set controls and loose or improperly connected cables are common causes of problems with hardware components. When investigating a system problem, first check all the external switches, controls, and cable connections. See [Section 2.1.1, “Performing an External Visual Inspection” on page 2-2](#).

If this does not resolve your problem, then visually inspect the system’s interior hardware for problems such as a loose card, cable connector, or mounting screw. See [Section 2.1.2, “Performing an Internal Visual Inspection” on page 2-2](#).

### 2.1.1 Performing an External Visual Inspection

1. Turn off the system and any attached peripherals (if applicable).
2. Verify that all power cables are properly connected to the system, the monitor, and peripherals, and check their power sources.
3. Inspect connections to any attached devices including network cables, keyboard, monitor, and mouse, as well as any devices attached to the serial port.

### 2.1.2 Performing an Internal Visual Inspection

1. Shut down the operating system, if necessary, and turn off the platform power on the front of the workstation.
2. Turn off the AC power on the rear of the workstation.
3. Turn off any attached peripherals, but do not disconnect the power cables.
4. Remove the left-side panel, following the procedures in [Section 4.2, “Installation Precautions” on page 4-2](#).



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**Caution** – Some components, such as the heatsink, can become extremely hot during system operations. Allow these components to cool before handling them.

---

5. Verify that the components are fully seated in their sockets or connectors and that the sockets are clean.
6. Verify that all cables inside the system are firmly attached to their appropriate connectors.



7. Replace the left-side panel.
8. Reconnect the system and any attached peripherals to their power sources, and then power them on.

## 2.2 Troubleshooting Procedures

TABLE 2-1 contains possible problems that might arise during the use of your workstation. Possible solutions are listed for each problem. If the solutions listed here do not fix the problem, run the appropriate diagnostic test (see [Chapter 3](#)).

**TABLE 2-1** Troubleshooting Procedures

<b>Problem</b>	<b>Possible solution</b>
Workstation does not power on when the front panel power button is pressed.	<ul style="list-style-type: none"> <li>• Make sure the power button on the front panel is turned on (the platform power LED on the button should be lit).</li> <li>• Make sure the power cable is connected correctly.</li> <li>• Make sure that the wall outlet has power. Test it by plugging in another device.</li> </ul>
Workstation does not power off when the front panel power button is pressed.	<ul style="list-style-type: none"> <li>• Try all of the power-off options shown in <a href="#">Section 1.4.2, “Powering Off the Workstation”</a> on page 1-10.</li> <li>• If the workstation still does not power off, disconnect the power cable from the rear of the chassis.</li> </ul>
The network status indicator does not light up.	<ul style="list-style-type: none"> <li>• Check the cabling and network equipment to make sure that all cables are correctly seated.</li> <li>• Reinstall the network drivers.</li> </ul>
An external device connected to a USB connector does not work.	<ul style="list-style-type: none"> <li>• Reduce the number of external devices connected to a USB hub.</li> <li>• Refer to the documentation that comes with the device.</li> </ul>
Cannot eject CD-RW/DVD-ROM tray	Insert the tip of a pen or paper clip into the ejection opening on the CD-RW/DVD-ROM drive tray.

**TABLE 2-1** Troubleshooting Procedures (Continued)

<b>Problem</b>	<b>Possible solution</b>
System cannot read the disk information.	Do the following: <ol style="list-style-type: none"><li>1. Turn off the workstation by pressing the power button.</li><li>2. Remove the left-side panel.</li><li>3. Check to make sure that the power and data cables are connected to the disk drive and the pins in the cable and connector are not bent.</li><li>4. Replace the left-side panel.</li><li>5. Turn on the workstation.</li></ol>
System cannot read the compact disc information.	Check the following: <ul style="list-style-type: none"><li>• Are you using the correct type of compact disc?</li><li>• Is the compact disc properly inserted in the drive?</li><li>• Is the compact disc clean and unscratched?</li><li>• Are the cables connected to the CD-RW/DVD-ROM drive?</li></ul>
No video displays on the monitor screen.	Check the following: <ul style="list-style-type: none"><li>• Is the cable connected to the video connector?</li><li>• Is the monitor power cord connected to the power outlet?</li><li>• Does the wall outlet have power? Test it by plugging in another device.</li><li>• Is the video card seated correctly in its connector?</li><li>• Are the internal cables properly connected to the video card?</li></ul>
External device is not working.	<ul style="list-style-type: none"><li>• Check the documentation that came with the device to see if any device drivers need to be installed.</li><li>• Ensure that the cables for the external device are firmly connected, and that the pins in the cable and connector are not bent.</li><li>• Power off the system, re-attach the external device, and power on the system.</li></ul>
Newly installed memory is not detected.	<ul style="list-style-type: none"><li>• Make sure that the memory is properly seated on the DIMM sockets.</li><li>• Move the memory to the other DIMM socket to determine whether the socket is defective.</li><li>• Make sure that you are using 512 MB, 1 GB, or 2 GB DDR 400 SDRAM modules with 3.05 cm max. height.</li><li>• Make sure that the memory is installed in pairs.</li></ul>
Workstation does not boot and you hear a loud, steady noise.	If you have installed an NVIDIA FX4000 AGP card in the workstation, the dual dongle (y splitter) power cable might not be connected properly. Refer to <a href="#">Section 4.5.6, "Installing a PCI or AGP Card" on page 4-31</a> for information on properly installing AGP cards.

---

## 2.3 Technical Assistance

If the troubleshooting procedures in this chapter fail to solve your problem, [TABLE 2-2](#) lists the Sun web sites and telephone numbers for additional technical support.

**TABLE 2-2** Sun Web Sites and Telephone Numbers

<b>Workstation Documents and Support Resources</b>	<b>URL or Telephone Number</b>
PDF files for all the current Sun Java Workstation W1100z and W2100z documents.	<a href="http://www.sun.com/documentation/">http://www.sun.com/documentation/</a>
Solaris™ and other software documents. This web site has full search capabilities.	<a href="http://docs.sun.com/documentation/">http://docs.sun.com/documentation/</a>
Discussion and troubleshooting forums.	<a href="http://supportforum.sun.com/">http://supportforum.sun.com/</a>
Support, diagnostic tools, and alerts for all Sun products.	<a href="http://www.sun.com/bigadmin/">http://www.sun.com/bigadmin/</a>
SunSolve <sup>SM</sup> web site. Contains links to software patches. Lists some system specifications, troubleshooting and maintenance information, and other tools.	<a href="http://www.sunsolve.sun.com/handbook_pub/">http://www.sunsolve.sun.com/handbook_pub/</a>
SunService <sup>SM</sup> support phone numbers.	1-800-872-4786 (1-800-USA-4Sun) Select Option 1
Lists international telephone numbers for SunService Support.	<a href="http://www.sun.com/service/contacting/solution.html">http://www.sun.com/service/contacting/solution.html</a>
Warranty and contract support contacts. Links to other service tools.	<a href="http://www.sun.com/service/online/">http://www.sun.com/service/online/</a>
Warranties for every Sun product.	<a href="http://www.sun.com/service/support/warranty">http://www.sun.com/service/support/warranty</a>



# Diagnostics

---

This chapter assists you with using the Diagnostics section of the Sun Java Workstation W1100z and W2100z Supplemental CD that came with your system. If you are having specific problems with your system, use the Pc-Check Diagnostics software to diagnose and solve these issues.

The following sections are included in this chapter:

- [Section 3.1, “Diagnostics Main Menu” on page 3-2](#)
- [Section 3.2, “System Information Menu” on page 3-3](#)
- [Section 3.3, “Advanced Diagnostics” on page 3-4](#)
- [Section 3.4, “Immediate Burn-In Testing” on page 3-8](#)
- [Section 3.5, “Deferred Burn-In Testing” on page 3-10](#)
- [Section 3.6, “Create Diagnostic Partition” on page 3-11](#)
- [Section 3.7, “Show Results Summary” on page 3-17](#)
- [Section 3.8, “Print Results Report” on page 3-19](#)
- [Section 3.9, “About Pc-Check” on page 3-19](#)
- [Section 3.10, “Exit to DOS” on page 3-19](#)

---

## 3.1 Diagnostics Main Menu

To access the Pc-Check Diagnostics Main Menu:

1. **Insert the Sun Java Workstation W1100z and W2100z Supplemental CD into your CD-RW drive and reboot the system.**

The system boots to the Sun Java Workstation W1100z and W2100z Supplemental CD Main Menu.

2. **Type 1 to run the Hardware Diagnostics Software.**

The system information loads, then the Diagnostics Main Menu opens and the following menu options are displayed:

- System Information Menu
- Advanced Diagnostics Tests
- Immediate Burn-in Testing
- Deferred Burn-in Testing
- Create Diagnostic Partition
- Show Results Summary
- Print Results Report
- About PC-CHECK
- Exit to DOS

---

**Note** – Using the diagnostics menu and options is similar to navigating DOS-based programs, such as using keyboard commands and Esc to exit a screen. Navigation instructions are shown on the bottom of each screen.

---

---

## 3.2 System Information Menu

TABLE 3-1 describes each option in the System Information menu.

TABLE 3-1 System Information Menu Options

Option	Description
System Overview	Includes basic information about your system, motherboard, BIOS, processor, memory cache, drives, video, modem, network, buses, and ports.
Hardware ID Image Menu	Hardware Identification Image menu lets you create a document showing information about your system, including comparing it against updates and newest versions of your system. XML is the format used to create and display this information, though you may also choose a text format (.txt) as well.
System Management Information	Information obtained from the system about the BIOS type, system, motherboard, enclosure, processors, memory modules, cache, slots, system event log, memory array, memory devices, memory device mapped addresses, and system boot.
PCI Bus Information	Similar to the System Management Information section, this section includes details about specific devices from <code>pci-config</code> space within the system.
IDE Bus Information	Shows the master/slave devices on the primary and secondary IDE controllers.
PCMCIA/CardBus Info	Not relevant to Sun Java Workstation W1100z and W2100z.
Interrupt Vectors	Details and lists device interrupt vector information.
IRQ Information	Shows hardware interrupt assignments.
Device Drivers	Shows device drivers loaded under Open DOS.
APM Information	This option tests the Advanced Power Management (APM) capabilities of the system. You can choose to change the power state, view the power status, indicate CPU usage, get a PM event, or change the interface mode.
I/O Port Browser	Shows the I/O port assignment for the hardware devices on the system.
Memory Browser	Enables you to view the mapped memory for the entire system.

**TABLE 3-1** System Information Menu Options *(Continued)*

Option	Description
Sector Browser	Reads sector information off the hard disks and CD-RW/DVD-ROM disks sector by sector.
CPU Frequency Monitor	Tests the processor speed.
CMOS RAM Utilities	Shows the CMOS settings of the system.
SCSI Utilities	Not applicable for the Sun W1100 and W2100 workstations.
Text File Editor	Opens up a file editor.
Start-Up Options	Allows you to set up options for diagnostics testing.

## 3.3 Advanced Diagnostics

[TABLE 3-2](#) gives the name and a brief description of each option in the Advanced Diagnostics Tests Menu.

**TABLE 3-2** Advanced Diagnostics Menu Options

Options	Description
Processor	Details information about the processor, and includes a Processor Tests menu to test the processor on the system.
Memory	Details information about the memory, and includes a Memory Tests menu to test the memory on the system. Also lists each type of memory in the system, such as system, cache, or video memory.
Motherboard	Details information about the motherboard, and includes a Motherboard Tests menu to test the motherboard on the system.
Floppy Disks	Not relevant to Sun Java Workstation W1100z and W2100z.
Hard Disks	Details information about the hard disk, and includes a Hard Disk Tests menu to test hard disks on the system. Refer to <a href="#">Section 3.3.1, “Hard Disk Testing”</a> on page 3-6 for detailed information about testing hard disks and script information.
CD-ROM/DVD	Includes a CD-ROM/DVD menu to test CD-RW/DVD-ROM devices on the system.



**TABLE 3-2** Advanced Diagnostics Menu Options (*Continued*)

<b>Options</b>	<b>Description</b>
ATAPI Devices	Details information about devices attached to the IDE controllers on the system other than a CD-RW/DVD-ROM or hard disks (for example, zip drives).
Serial Ports	Details information about the serial port, and includes a Serial Ports Tests menu to test serial ports on the system.
Parallel Ports	Details information about the parallel port, and includes a Parallel Ports Tests menu to test the parallel ports on the system.
Modems	Details information about the modem, and includes a menu that enables various tests on the modems attached to the system.
ATA	Includes an ATA test menu. Select the parallel ATA driver to test, as serial ATA is not yet supported on the Sun W1100 and W2100 workstations.
USB	Details information about the USB devices on the system, and includes an USB Tests menu to test the USB.
FireWire	Details information about FireWire devices and includes a FireWire tests menu.
SCSI	Performs SCSI register controller tests.
Network	Performs network register controller tests.
Keyboard	Includes a Keyboard Test menu with options for performing different tests on the keyboard.
Mouse	Details information about the mouse, and includes a menu to test the mouse on the system.
Joystick	Details information about the joystick, and includes a menu to test the joystick.
Audio	Details information about the audio devices on the system, and includes an Audio Tests menu to test audio device information. A PCI audio card is required to run this test.

**TABLE 3-2** Advanced Diagnostics Menu Options (*Continued*)

Options	Description
Video	Details information about the video card. Initially, the monitor might flicker, but then brings up a Video Test Options menu that enables you to perform various video tests.
Printers	Details information about printers, and includes a listing of the printer types for testing printers.
Firmware - ACPI	Details information about Advanced Configurable Power Interface (ACPI) and includes an ACPI Tests menu to test ACPI.

## 3.3.1 Hard Disk Testing

To test the hard disk:

1. **From the Main Menu, choose Advanced Diagnostics Tests.**
2. **From the Advanced Diagnostics Menu, choose Hard Disks.**
3. **From the Select Drive Menu, choose the hard disk you are testing.**

The Hard Disk Diagnostics screen opens, showing both the information for the hard disk you have selected and the Hard Disk Tests Menu.

Within the Hard Disk Tests Menu, there are the following options:

- Select Drive
- Test Settings
- Read Test
- Read Verify Test
- Non-Destructive Write Test
- Destructive Write Test
- Mechanics Stress Test
- Internal Cache Test
- View Error Log
- Utilities Menu
- Exit

The Media Test options include the Read Test, the Read Verify Test, the Non-Destructive Write Test, and the Destructive Write Test. These tests are relevant to testing the media associated with the hard drive hardware, such as the physical disk.



---

**Caution** – Running the Destructive Write Test destroys any data that is on the disk.

---

The Device Test options include the Mechanics Stress Test and the Internal Cache Test. These tests are relevant to testing nonmedia-related devices associated with the hard drive hardware, such as the head and internal cache.

As well as choosing any of these tests, you can also define several parameters of the test.

You can change the parameters within the Test Settings option. Your options within Test Settings include the following:

- **Media Test Settings**

Enables you to choose the test time duration, the percentage of the hard disk to test, and the sectors to be tested on the hard disk.

- **Device Test Settings**

Enables you to select the test time durations of the devices and the test level.

- **Number of Retries**

Enables you to select the number of times to retry testing a device before terminating the test.

- **Maximum Errors**

Enables you to select the number of errors allowed before terminating the test.

- **Check SMART First**

SMART stands for Smart Monitoring Analysis Reporting Test.

- **HPA Protection**

HPA stands for Host Protected Area.

- **Exit**

---

## 3.4 Immediate Burn-In Testing

The Immediate Burn-In Testing option enables you to run burn-in test scripts on your workstation. Three scripts have already been created for testing your system:

- `quick.tst` - Performs a quick overview test to determine the operating status of your system. This test can take up to twenty minutes and requires some user input.
- `noinput.tst` - Performs a quick overview test to determine the operating status of your system. This test does not require user input. The time for this test varies according to how much memory is in the system. It can take up to one hour and twenty minutes.
- `full.tst` - Performs a complete test on all components to determine the operating status of your system. This test can take several hours, depending upon your system configuration.

---

**Tip** – Each of these scripts test the operating status of your entire system. If you want to test only a certain percentage of your system’s hard drives, refer to the [Section 3.3.1, “Hard Disk Testing” on page 3-6](#) to change test options to test only a percentage of the hard drives on your system.

---

When you choose the Immediate Burn-in Testing menu option, the Continuous Burn-in Testing screen opens. The screen includes the list of options shown in [TABLE 3-3](#) for running the tests. When a `quick.tst`, `noinput.tst` or `full.tst` script is loaded, the defaults indicated in the third column are automatically loaded

:

**TABLE 3-3** Continuous Burn-in Testing Options

<b>Option</b>	<b>Default - General</b>	<b>Default Using quick.tst, noinput.tst, or full.tst Script</b>	<b>All Possible Choices</b>
Pass Control	Overall Time	Overall Passes	Individual Passes, Overall Passes, or Overall Time
Duration	01:00	1	Enter any number to choose the time duration of the test
Script File	N/A	quick.tst, noinput.tst, or full.tst	quick.tst, noinput.tst, or full.tst
Report File	None	None	User-defined
Journal File	None	D:\noinput.jrl, D:\quick.jrl, or D:\full.jrl	User-defined
Journal Options	Failed Tests	All Tests, Absent Devices, and Test Summary	Failed Tests, All Tests, Absent Devices, and Test Summary
Pause on Error	N	N	Y or N
Screen Display	Control Panel	Control Panel	Control Panel or Running Tests
POST Card	N	N	Y or N
Beep Codes	N	N	Y or N
Maximum Fails	Disabled	Disabled	1-9999

To load one of the scripts available to test the devices on your system, do the following:

- **From the Main Menu, choose Immediate Burn-in Testing.**

The top portion of the screen lists the option described in [TABLE 3-3](#), and the bottom portion of the screen lists the Burn-in Menu options described below.

- **Load Burn-in Script**

Enter one of the following:

- `quick.tst`, `noinput.tst`, or `full.tst`
- If you have created and saved your own script, enter `d:\testname.tst`

Where *testname* is the name of the script that you have created.

- **Save Burn-in Script**

To save a burn-in script that you have created, enter `d:\testname.tst`

Where *testname* is the name of the script that you have created.

- **Change Options**

Opens the Burn-in Options menu, which enables you to modify the various options listed in [TABLE 3-3](#) for the currently loaded test script.

- **Select Tests**

Opens a listing of the tests available for your workstation configuration to run for the currently loaded test script.

- **Perform Burn-in Tests**

Starts to run the currently loaded burn-in test script.

---

## 3.5 Deferred Burn-In Testing

Deferred Burn-in Testing allows you to create and save your own scripts to run at a later time.

- **From the Main Menu, choose Deferred Burn-in Testing.**

The top portion of the screen lists the option described in [TABLE 3-3](#), and the bottom portion of the screen lists the Burn-in Menu options described below.

- **Load Burn-in Script**

Enter one of the following:

- `quick.tst`, `noinput.tst`, or `full.tst`
- If you have created and saved your own script, enter `d:\testname.tst`

Where *testname* is the name that you have created.

- **Save Burn-in Script**

To save a burn-in script that you have created, enter `d:\testname.tst`

Where *testname* is the name of the script that you have created.

- **Change Options**

Opens the Burn-in Options menu, which enables you to modify the various options listed in [TABLE 3-3](#) for the currently loaded test script.

- **Select Tests**

Opens a listing of all of the possible types of tests available for you to run for the currently loaded test script.

---

## 3.6 Create Diagnostic Partition

The Create Diagnostic Partition option will install a diagnostic partition on the first bootable disk seen by the Sun Java Workstation W1100z or W2100z platform.

On an IDE system, the first bootable disk is on the primary/master IDE device. On a SCSI system, the first bootable disk is the first disk found on the SCSI A channel. If a disk is not found on the SCSI A channel, then it will search the SCSI B channel for the first hard disk found.

The following subsections explain how to create and access the diagnostic partition on the Sun Java Workstation W1100z and W2100z:

- [“Removing Existing Partitions on a Hard Disk” on page 12](#)
- [“Adding a Diagnostic Partition to the First Bootable Disk” on page 13](#)
- [“Creating a Log File on the Diagnostic Partition” on page 14](#)
- [“Accessing the Diagnostic Partition Under Red Hat Linux” on page 15](#)
- [“Accessing the Diagnostic Partition Under Solaris x86” on page 16](#)
- [“Accessing the Diagnostic Partition Under Windows” on page 17](#)

## 3.6.1 Removing Existing Partitions on a Hard Disk

The Create Diagnostic Partition option will only create a diagnostic partition on a hard disk if that hard disk is completely empty of any partitions. You will need to delete any existing partitions on a hard disk if you plan on using the hard disk to create a diagnostic partition on it.



---

**Caution** – Removing all hard disk partitions will destroy all data on the disk.

---

You can clear the partitions using the following procedure:

1. **Insert the Supplemental CD into the CD-RW/DVD-ROM tray.**
2. **Reboot the workstation.**
3. **At the Supplemental CD Main Menu, type 3 to exit to DOS.**
4. **Type `fdisk` at the command prompt and press the Enter key.**
5. **Type 4 to select alternate fixed disk.**

The second hard disk as seen from `fdisk` is the first bootable disk of the system. The first hard disk as seen from `fdisk` is the bootable Supplemental CD.



---

**Caution** – When performing the following tests, be careful not to delete any operating system partitions that you want to keep. Removing hard disk partitions will destroy all data on the disk.

---

6. **Type 2 to Delete DOS partition.**
7. **Type 1 or 2 depending on the type of partition you want to delete.**
8. **Type the number of the partition you want to delete.**
9. **Type Y to erase the data and the partition.**
10. **Repeat [Step 6](#) through [Step 9](#) until all partitions have been removed.**
11. **Press the Esc key to exit and strike any key to reboot the workstation.**



## 3.6.2 Adding a Diagnostic Partition to the First Bootable Disk

Pc-Check can only view the first or second hard disk on the system from the boot loader. The software automatically installs the diagnostic partition on the first bootable disk. To add the diagnostic partition on the first bootable disk:

1. **Insert the Supplemental CD into the CD-RW/DVD-ROM tray.**
2. **Reboot the workstation.**
3. **At the Supplemental CD Main Menu, type 1 to run Hardware Diagnostics.**
4. **Select Create Diagnostic Partition at the Main Menu.**
  - If the first bootable disk is clear of partitions then the Sun Microsystems Partitioning Utility window will appear. It states: Your primary hard disk is not partitioned. Would you like to partition it now?
    - Select Yes and press Enter.
    - A window will appear stating, Partitioning complete. Your machine will now be restarted.
  - If the first bootable disk is not clear of partitions then a window will appear stating that it is unable to create a hardware diagnostic partition because there are already partitions on the disk.
    - If this happens, then go to [Section 3.6.1, “Removing Existing Partitions on a Hard Disk”](#) on page 3-12 to clear the partitions from the disk.
    - Repeat [Step 1](#) through [Step 4](#) of this procedure.
5. **Press Enter to reboot your workstation.**

### 3.6.3 Creating a Log File on the Diagnostic Partition

All the scripts that are loadable with the hardware diagnostics software come predefined with logging to the Diagnostic Partition enabled. The names of log files will correspond to the name of the script. For example, a script named `noinput.tst` will create a log file named `noinput.jrl`.

The following instructions show an example of how to create and access a log file on the diagnostic partition for the `noinput.tst` script:

1. **Insert the Supplemental CD into the CD-RW/DVD-ROM tray.**
2. **Reboot the workstation.**
3. **At the Supplemental CD Main Menu select 1 to run Hardware Diagnostics.**
4. **At the Hardware Diagnostics Main Menu select Immediate Burn-In Testing.**
5. **Select the Load Burn-in Script.**
6. **Type `noinput.tst` and press Enter.**

If you are using a test you have created yourself, you will need to enter `d:\testname.tst` into the Load Burn-in Script field.

Where *testname* is the name of the test you have created.

7. **Select Perform Burn-in Tests to run the script.**
8. **When the tests have completed, press the Esc key to exit the Display Results window.**
9. **Select Exit to DOS and press Enter.**
10. **At the DOS prompt, type the following:**
11. **Type the following to list the contents of the Diagnostic Partition.**

```
C:> d:
```

```
D:> dir
```

The `noinput.jrl` log will appear.

## 3.6.4 Accessing the Diagnostic Partition Under Red Hat Linux

To access the diagnostic partition when you are running a Red Hat Linux operating system:

1. Remove the Supplemental CD from the CD-RW/DVD-ROM tray.
2. Reboot the workstation and start the Linux Red Hat operating system.
3. Become superuser.
4. Determine if your diagnostic partition has been configured to be mounted by typing the following command:

```
# ls /diagpart
```

- If this command fails to list the log files created by the hardware diagnostics software then the operating system has never been configured to mount the diagnostic partition. Continue to [Step 5](#).
- If this command succeed in listing the log files created by the hardware diagnostics software, then the operating system has already been configured to mount the diagnostic partition. All users have read access to this partition. Only the super user has read/write access to this partition. You do not need to continue this procedure.

5. Insert the Supplemental CD into the CD-RW/DVD-ROM tray.
6. When the CD is mounted, open up a terminal window.
7. Type the following command:

```
# cd /mnt/cdrom/drivers/linux/red_hat
```

8. Type the following to install the diagnostic partition:

```
# ./install.sh
```

9. Press Enter.

The following lines appear if the diagnostic partition is mounted successfully:

```
Mounting Diagnostic Partition
```

```
Installation Successful
```

10. Type the following command:

```
# ls /diagpart
```

This will list the contents of the diagnostic partition.

## 3.6.5 Accessing the Diagnostic Partition Under Solaris x86

To access the diagnostic partition when you are running a Solaris x86 operating system:

1. **Remove the Supplemental CD from the CD-RW/DVD-ROM tray.**
2. **Reboot the machine and start Solaris x86.**
3. **Become superuser.**
4. **Determine if your diagnostic partition has been configured to be mounted by typing the following command:**  

```
# ls /diagpart
```

  - If this command fails to list the log files created by the hardware diagnostics software then the operating system has never been configured to mount the diagnostic partition. Continue to [Step 5](#).
  - If this command succeed in listing the log files created by the hardware diagnostics software, then the operating system has already been configured to mount the diagnostic partition. All users have read access to this partition. Only the super user has read/write access to this partition. You do not need to continue this procedure.
5. **Insert the Supplemental CD into the CD-RW/DVD-ROM tray.**
6. **When the CD is mounted open up a terminal window.**
7. **Type the following:**  

```
# cd /cdrom/cdrom0/drivers/sx86
```
8. **Type the following to install the diagnostic partition:**  

```
# ./install.sh
```
9. **Press the Enter key.**  
The following lines should appear if the diagnostic partition is mounted successfully:  

```
Mounting Diagnostic Partition  
Installation Successful
```
10. **Type the following command to list the contents of the diagnostic partition:**  

```
# ls /diagpart
```

## 3.6.6 Accessing the Diagnostic Partition Under Windows

The Windows operating system does not allow the mounting of a diagnostic partition. There is no way to view or gain access to the diagnostic partition if you are running Windows on a Sun Java Workstation W1100z or W2100z.

The only way to retrieve the contents (log files) on the diagnostic partition is to attach a USB floppy drive to the Sun Java Workstation W1100z or W2100z and complete the following procedure:

1. **Insert the USB floppy drive into any USB port on the Sun Java Workstation W1100z or W2100z.**
2. **Insert the Supplemental CD into the CD-RW/DVD-ROM tray.**
3. **Reboot the workstation.**
4. **At the Supplemental CD Main Menu, type 3 to exit to DOS.**
5. **Type the following at the DOS command prompt:**

```
C:> d:
```

6. **To copy file a file named `noinput.jr1` to the USB floppy drive, type:**

```
D:> copy d:\noinput.jr1 a:\
```

The journal file is now saved to the floppy diskette in the USB floppy drive.

---

## 3.7 Show Results Summary

The summary lists the tests run and shows the results. Either Pass, Fail or N/A is listed for each option.

The following list is a complete listing of all possible options available with the Supplemental CD. If your own system does not have all of these options, they might not show up when the Show Results Summary displays.

### ■ Processor

This section shows the following tests conducted against the processor: Core Processor Tests, AMD 64 Bit Core Tests, Math Co-Processor Tests - Pentium Class FDIV and Pentium Class FIST, MMX Operation, 3DNow! Operation, SSE Instruction Set, SSE2 Instruction Set, and MP Symmetry.

- **Motherboard**

This section shows the following tests conducted against the motherboard: DMA Controller Tests, System Timer Tests, Interrupt Test, Keyboard Controller Tests, PCI Bus Tests, and CMOS RAM/Clock Tests.

- **Memory, Cache Memory, and Video Memory**

This section shows the following tests conducted against the various types of memory: Inversion Test Tree, Progressive Inv. Test, Chaotic Addressing Test, and Block Rotation Test.

- **Input Device**

This section shows the following tests conducted against the input device: Verify Device, Keyboard Repeat, Keyboard LEDs, and Turbo Switch.

- **Mouse**

This section shows the following tests conducted against the mouse: Buttons, Ballistics, Text Mode Positioning, Text Mode Area Redefine, Graphics Mode Positions, Graphics Area Redefine, and Graphics Cursor Redefine.

- **Video**

This section shows the following tests conducted against the video: Color Purity Test, True Color Test, Alignment Test, LCD Test, and Test Cord Test.

- **Printer**

The Verify Output test is conducted against the printer.

- **Multimedia**

This section shows the following tests conducted against the multimedia components: Internal Speaker Test, FM Synthesizer Test, PCM Sample Test, CD/DVD Drive Read Test, CD/DVD Transfer (KB/Sec), CD/DVD Transfer Rating, CD/DVD Drive Seek Test, CD/DVD Seek Time (ms), CD/DVD Test Disk Read, and CD/DVD Tray Test.

- **ATAPI Devices**

This section shows the following tests conducted against ATAPI devices: Linear Read Test, Non-Destructive Write, and Random Read/Write.

- **Floppy Disk**

This section shows the following tests conducted against the floppy disk: Linear Read Test, Write Protect Test, Non-Destructive Write, and Random Read/Write.

- **Hard Disk**

This section shows the following tests conducted against the hard disk: Read Test, Read Verify Test, Non-Destructive Write Test, Destructive Write Test, Mechanics Stress Test, and Internal Cache Test.

- **Serial Port**

This section shows the following tests conducted against the serial port: IRQ Test, Line Control Test, Handshake Test, Loopback Test, and Internal FIFO Test.

- **Modem**

This section shows the following tests conducted against the modem: Data Collection, Register Test, Loopback Test, Carrier Test, and Dial Tone Test.

- **Parallel**

This section shows the following tests conducted against the parallel: Verify Controller, Check Status Port, and Interrupt Test.

- **USB**

This section shows the following tests conducted against the USB: Controller Tests and Functional Tests.

- **Hardware ID**

The compare test is used to determine the machine ID for the system. This test is not available for the Sun Java Workstation W1100z and W2100z.



## 3.8 Print Results Report

This option enables you to print results of the diagnosis of your system.

Ensure that your workstation is connected to a printer, then enter the required information to print the results.



## 3.9 About Pc-Check

This screen includes general information about Pc-Check software, including resident and non-resident components, such as mouse devices.



## 3.10 Exit to DOS

This option exits Pc-Check and returns you to the DOS prompt.





# Maintaining the Workstation

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This chapter provides instructions describing how to add, replace and configure the components in the workstation after it has been set up. The following sections are included in this chapter:

- [Section 4.1, “Tools and Supplies Needed” on page 4-1](#)
- [Section 4.2, “Installation Precautions” on page 4-2](#)
- [Section 4.3, “Opening the Workstation” on page 4-4](#)
- [Section 4.4, “Location of Components” on page 4-7](#)
- [Section 4.5, “Customer Replaceable Unit \(CRU\) Procedures” on page 4-8](#)

---

## 4.1 Tools and Supplies Needed

- Philips head screwdriver
- Flat-head screwdriver
- Hex-nut driver (for removing a mezzanine card from a dual-processor (2P) system only)
- Antistatic wrist strap (shipped with every CRU)
- Alcohol pads and thermal grease (shipped with CPU, heatsink, motherboard, or mezzanine card CRUs)

---

## 4.2 Installation Precautions

Before removing the system's left-side access panel, read the following sections. These sections contain important ESD precautions, along with preinstallation and postinstallation instructions.

### 4.2.1 ESD Precautions

Electrostatic discharge (ESD) can damage your processor, disk drives, expansion boards, and other components. Always observe the following precautions before you install a system component:

1. **Do not remove a component from its protective packaging until you are ready to install it.**
2. **Wear a wrist strap and attach it to the system chassis ground, or any metal part of the system, before handling components.**
3. **Disconnect the AC power cord from the system before removing or replacing any of the system components.**

### 4.2.2 Preinstallation Instructions

Always perform the following steps before you install any component:

1. **Turn off the system and all of the peripherals connected to it.**
2. **Unplug the AC power cable from the system.**  
Standby power is applied to the motherboard whenever an AC power cord is connected.
3. **Follow the ESD precautions described above when handling a system component.**

See the following section for specific installation instructions.



---

**Caution** – Failure to properly turn off the system before you start installing components may cause serious damage.

---

## 4.2.3 Postinstallation Instructions

Perform the following steps after installing a workstation component:

1. **Ensure that all of the components are installed as described in the step-by-step instructions.**
2. **Reinstall any PCI cards or peripherals that you had previously removed.**
3. **Reinstall the system's left-side panel and front bezel.**
4. **Connect all external cables to the system.**
5. **Turn on the system.**



---

**Caution** – If the left-side panel and hard disk drives are removed, do not operate the workstation for more than ten minutes. Improper cooling airflow might damage the system's components.

---

---

## 4.3 Opening the Workstation



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**Caution** – Before you proceed, turn off your system and all of the peripherals connected to it. Refer to [Section 4.2.2, “Preinstallation Instructions”](#) on page 4-2.

---

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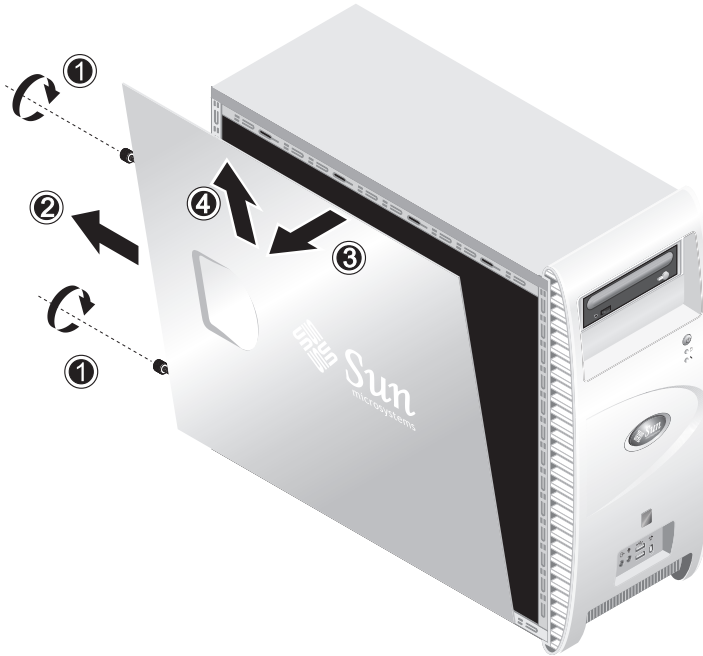
**Note** – The illustrations used in this section show a single-processor (1P) system chassis.

---

### 4.3.1 Removing the Access Panel

The left-side access panel must be removed to gain access to the system’s internal components. See [FIGURE 4-1](#) when performing this procedure.

1. Turn off the system and all of the peripherals connected to it.
2. Loosen the two captive thumbscrews located on the edge of the left-side panel closest to the rear panel (1).
3. Slide the panel towards the rear of the workstation (2). Tilt the top edge of the panel out (3) and then up (4) to remove it from the chassis.



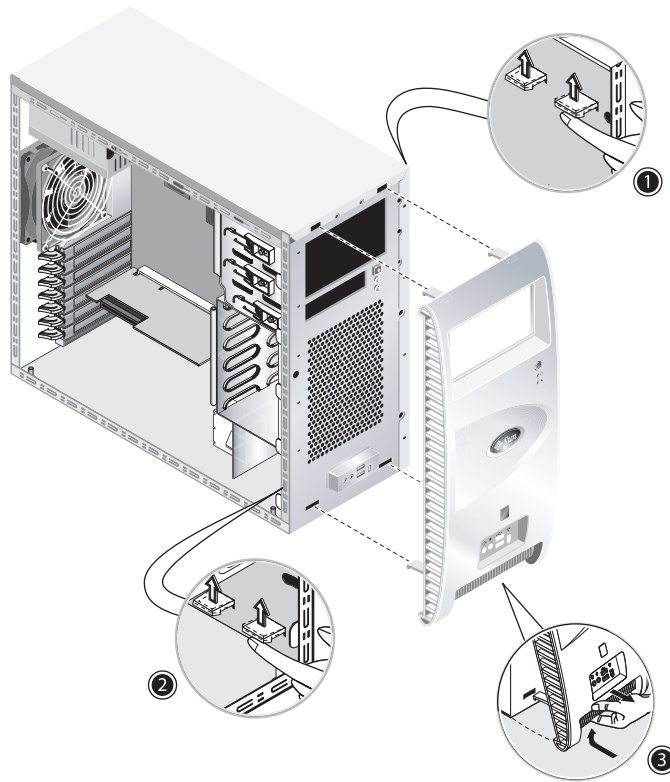
**FIGURE 4-1** Removing the Left-Side Panel

## 4.3.2 Removing the Front Bezel

See [FIGURE 4-2](#) when performing this procedure.

To remove the front bezel from the workstation:

1. Remove the CD/DVD drive as instructed in [Section 4.5.2, “Replacing a CD/DVD Drive”](#) on page 4-12.
2. Remove the filler panel in the second 5.25 inch bay (if a second drive is not installed).
3. After the CD/DVD drive and filler panel are removed, reach through the back of the CD/DVD drive bay and push the retention clips on the top of the bezel upward. See (1) in [FIGURE 4-2](#).

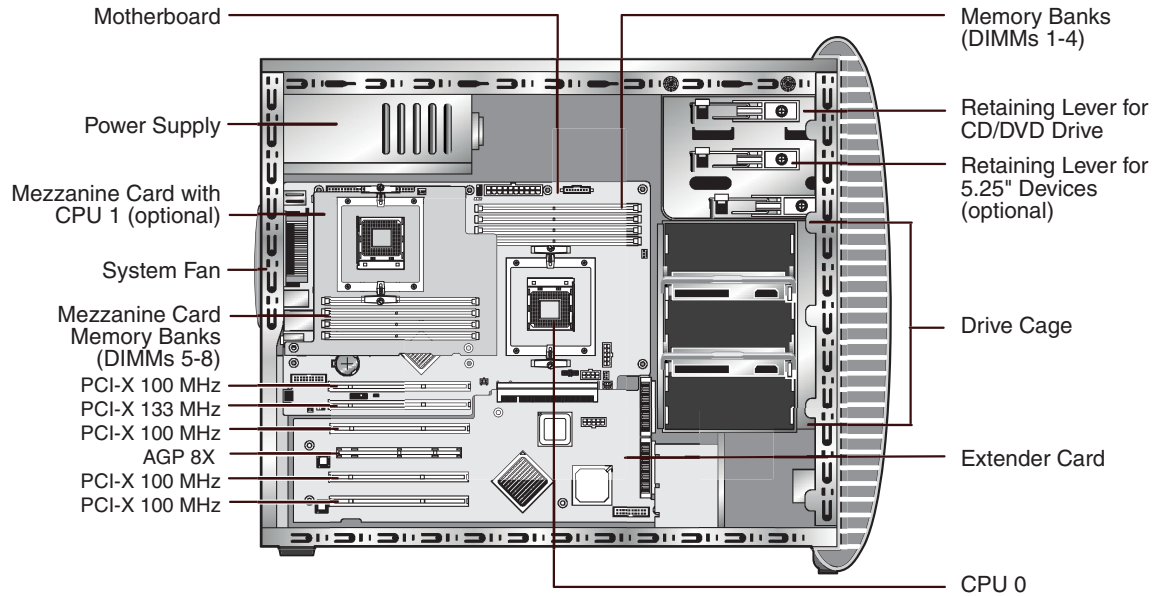


**FIGURE 4-2** Removing the Front Bezel

4. Pull the top of the bezel away from the chassis.
5. Press the retention clips on the bottom of the bezel upward(2) to release the bezel and pull the bezel away from the chassis. (3)

## 4.4 Location of Components

See [FIGURE 4-3](#) to locate components before performing the remove and replace procedures.



**FIGURE 4-3** Locations of Components (Dual-processor (2P) system shown)

---

## 4.5 Customer Replaceable Unit (CRU) Procedures

The following system components may be installed or replaced by the customer.

- Hard disk drive (refer to [“Replacing or Adding Hard Disk Drives”](#) on page 4-9)
- DVD drive (refer to [“Replacing a CD/DVD Drive”](#) on page 4-12)
- Optional storage devices (refer to [“Replacing Optional Storage Devices”](#) on page 4-14)
- CPU (refer to [“Replacing a CPU”](#) on page 4-15)
- DIMMs (refer to [“Replacing or Adding DIMMs”](#) on page 4-28)
- PCI cards (refer to [“Installing a PCI or AGP Card”](#) on page 4-31)
- Battery (refer to [“Replacing the System Battery”](#) on page 4-38)
- System fan (refer to [“Replacing the System Fan”](#) on page 4-39)
- Power supply (refer to [“Replacing the Power Supply”](#) on page 4-41)
- USB Audio card (refer to [“Replacing the USB Audio Card Assembly”](#) on page 4-42)
- System cables (refer to [“Replacing System Cables”](#) on page 4-44)
- Operator’s panel (refer to [“Replacing the Operator’s Panel”](#) on page 4-43)
- Mezzanine card (refer to [“Replacing the Mezzanine Card”](#) on page 4-47)
- Extender card (refer to [“Replacing the Extender Card”](#) on page 4-49)

---

**Note** – The motherboard should be replaced only by trained field service technicians.

---

- Motherboard (refer to [“Replacing the Motherboard”](#) on page 4-50)



## 4.5.1 Replacing or Adding Hard Disk Drives

---

**Note** – Up to two IDE hard disk drives are supported in the Sun Java Workstation W1100z and up to four SCSI hard disk drives are supported in the Sun Java Workstation W2100z. The hard disk drives must both be the same type. Therefore, in a 1P (W1100z) system, a second hard disk drive must be an EIDE drive; in a 2P (W2100z) system, additional hard disk drives must be a SCSI drive.

---

### 4.5.1.1 Replacing a Hard Disk Drive

---

**Note** – The replacement hard disk drive must be configured the same as the drive being replaced.

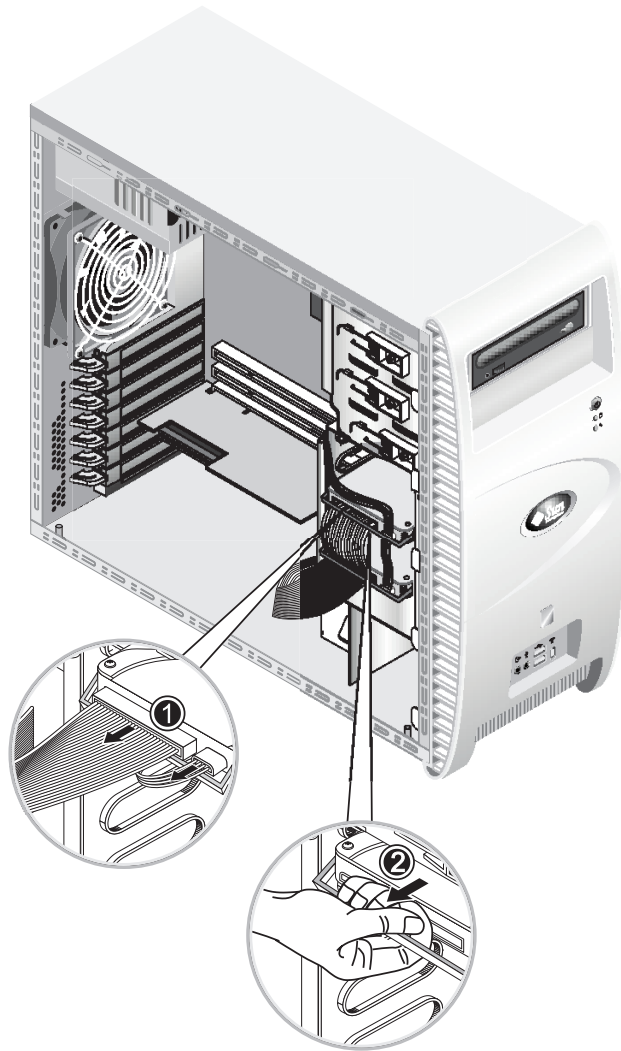
---

This procedure describes how to remove a hard disk drive. See [FIGURE 4-4](#) when performing this procedure.

To remove the hard disk drive:

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel.
3. Disconnect the power and data cables from the drive (1).
4. Grasp the hard-disk-drive carrier handle at its center (2), then gently withdraw the drive from the cage.
5. If you are replacing the hard drive, unfasten the four screws securing the hard disk drive to the carrier and remove the drive.

Installation is the reverse of this procedure.



**FIGURE 4-4** Removing the Hard Disk Drive

## 4.5.1.2 Adding a Hard Disk Drive

To install additional hard disk drives when one or more hard disk drive are already installed:

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.



---

**Caution** – Make sure to observe the proper ESD precautions when installing the hard disk drive.

---

2. Remove the left-side access panel.
3. Remove the empty drive carrier from the drive cage, if necessary.
4. Insert the hard disk drive into the drive carrier, and fasten the four screws to secure the hard disk drive to the carrier.
5. Gently push the hard disk drive carrier into the drive cage.

Use drive bays 2 and 4 if you are installing IDE drives. Use bays 1, 2, 4 or 5 if you are installing SCSI drives. Leave bay 3 empty or use it to store excess cable. See [FIGURE 4-5](#) for positions of drive bays.

1	SCSI	Top of drive cage
2	SCSI or IDE	
3	Empty	
4	SCSI or IDE	
5	SCSI	Bottom of drive cage

**FIGURE 4-5** Hard Drive Bay Positions

6. Follow the instructions for the type of hard disk drive that you are installing:
  - If you are installing additional SCSI drive(s), do the following:
    - a. Connect drives in bays 1 and 2 to SCSI channel A and drives in bays 4 and 5 to SCSI channel B.
    - b. Use the target ID 0 for drives in bays 1 and 4. Use target ID 1 for drives in bays 2 and 5.

Refer to the manufacturer's documentation that comes with the hard disk drive to determine the exact jumper settings.
  - If you are installing an additional IDE drive, do the following:
    - a. Change the jumper settings so that the drive that was installed first is the master and the newly installed drive is the slave.

Refer to the manufacturer's documentation that comes with the hard disk drive to determine the exact jumper settings.
    - b. Connect the IDE data cable to the newly installed drive.
7. Connect the power cable to the newly installed hard disk drive power connector.

## 4.5.2 Replacing a CD/DVD Drive

This procedure describes how to remove the CD/DVD drive. See [FIGURE 4-6](#) when performing this procedure.

---

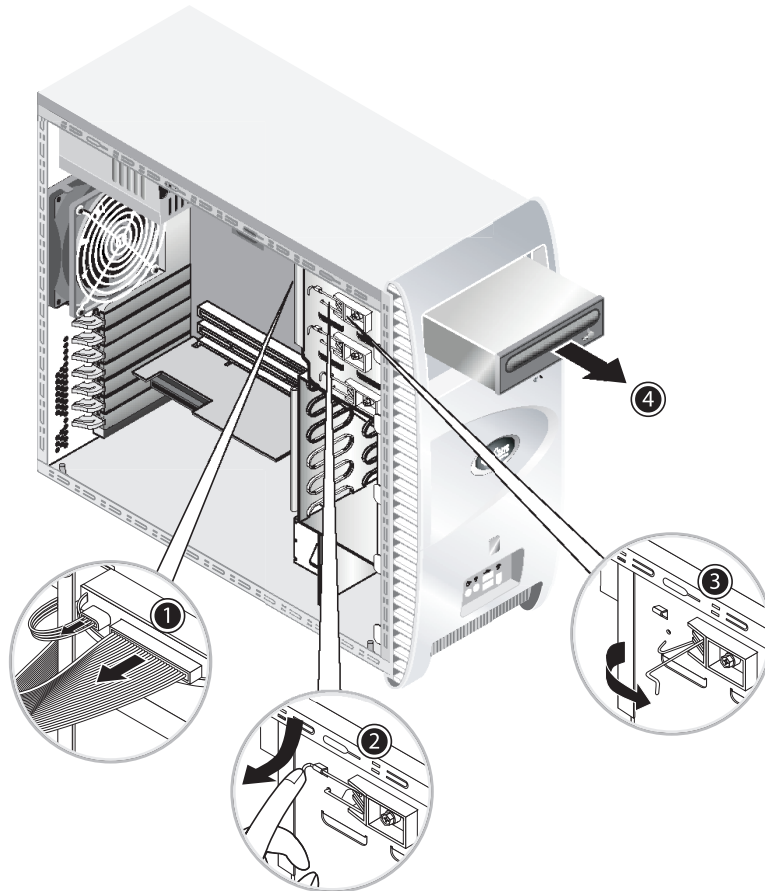
**Note** – The replacement CD/DVD drive must be configured the same as the drive being replaced.

---

To remove a CD/DVD drive:

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel.

3. Disconnect the power and IDE data cables from the CD/DVD drive (see (1) on [FIGURE 4-6](#)).
4. Simultaneously push the drive retaining lever inward and down to release the lever from its retaining hook (2).
5. Rotate the lever towards the front of the chassis until the pin, at the other end of the lever, is freed from its hole near the retaining hook (3).
6. Gently push the CD/DVD drive from the back of the CD/DVD drive bay out of the front of the workstation (4).



**FIGURE 4-6** Removing the CD/DVD Drive

7. Place the CD/DVD drive on a static-dissipating work surface or inside an anti-static bag.

Installation is the reverse of this procedure. Some items to note when reinstalling a CD/DVD drive:

- When reinstalling the CD/DVD drive into the drive bay, ensure that the hole in the drive's case is aligned with the hole in the chassis, from which the drive retaining lever pin was withdrawn (refer to [FIGURE 4-6](#)).
- Ensure that the IDE jumper, on the rear of the CD/DVD drive, is set to CS (Cable Select).

### 4.5.3 Replacing Optional Storage Devices

Your system comes preinstalled with a CD-RW/DVD-ROM drive. Below the CD-RW/DVD-ROM drive is an empty 5.25-inch half-height bay, enabling you to install an additional storage device. Refer to [FIGURE 4-6](#) when performing this procedure.

To remove an optional storage device:

1. **Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.**
2. **Remove the left-side access panel.**
3. **Pull out the bay cover.**  
Keep the cover for later use.
4. **Simultaneously push the drive retaining lever inward and down to release the lever from its retaining hook. See [FIGURE 4-6](#) (2).**
5. **Rotate the lever towards the front of the chassis until the pin, at the other end of the lever, is freed from its hole near the retaining hook. See [FIGURE 4-6](#) (3).**
6. **Slide the 5.25-inch drive with preinstalled carrier into the drive bay.**
7. **Lock the drive in the bay by rotating the drive retaining lever towards the rear of the chassis.**

---

**Note** – When reinstalling the CD/DVD drive into the drive bay, ensure that the hole in the drive's case is aligned with the hole in the chassis, from which the drive retaining lever pin was withdrawn (refer to [FIGURE 4-6](#)).

---

8. **Press the end of the lever down and inward, until it is captured by the retaining hook.**
9. **Connect the power and IDE data cables to the rear of the new drive.**

## 4.5.4 Replacing a CPU

This section describes how to remove or replace a CPU and heatsink. The remove and replace procedures are identical for both CPU 0 (on the motherboard) and CPU 1 (on the optional mezzanine card).

### 4.5.4.1 Preparing for Installation

---

**Note** – Before removing a CPU from the motherboard, create a backup file to preserve all important data.

---

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel.
3. Gently lay the system on its right side on a stable, non-slip surface.



---

**Caution** – The heatsink can become extremely hot. Allow a few minutes for the heatsink to cool before attempting this procedure.

---

### 4.5.4.2 Removing a Heatsink/Fan Assembly and CPU

The procedures for removing a heatsink/fan assembly will vary, depending on the model of assembly installed on the motherboard. Make sure to identify the heatsink/fan assembly part number before doing the installation.



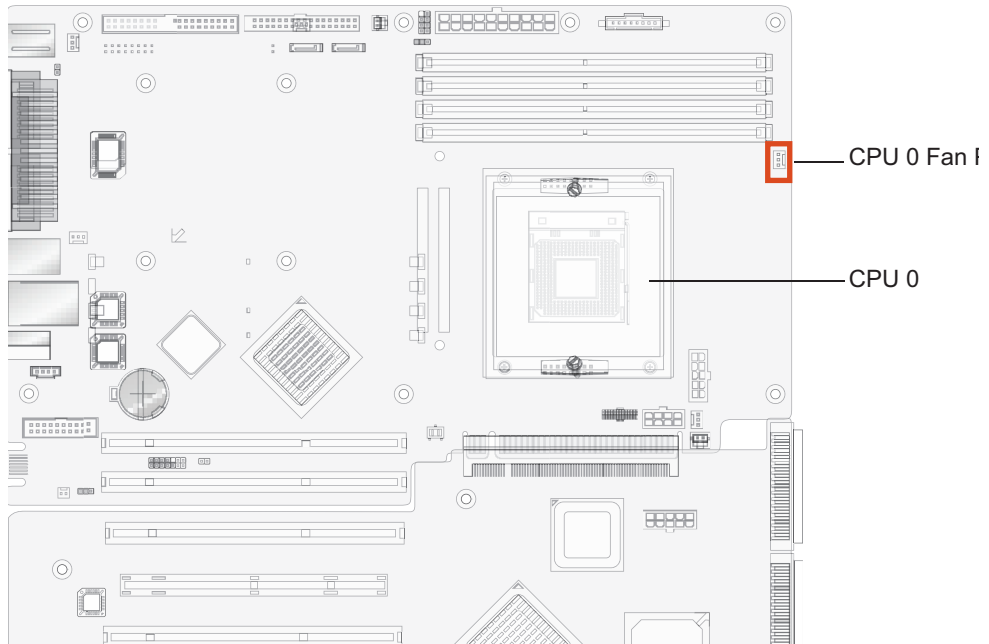
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**Caution** – The heatsink can become extremely hot. Allow a few minutes for the heatsink to cool before attempting the upgrade.

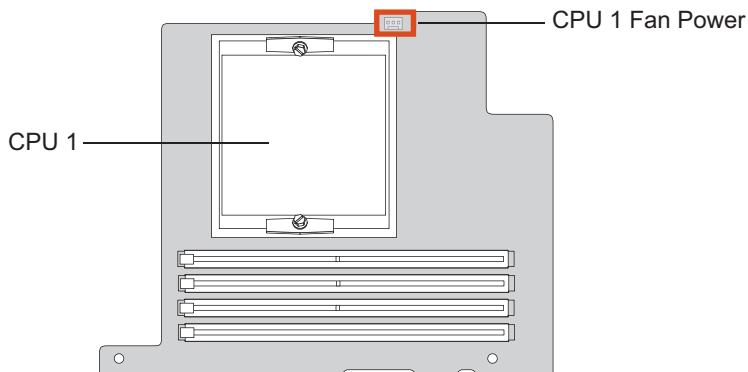
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**1. Disconnect the CPU fan cable from its connector.**

- If you are removing CPU 0, on the motherboard, see [FIGURE 4-7](#).
- If you are removing CPU 1, on the mezzanine card, see [FIGURE 4-8](#).



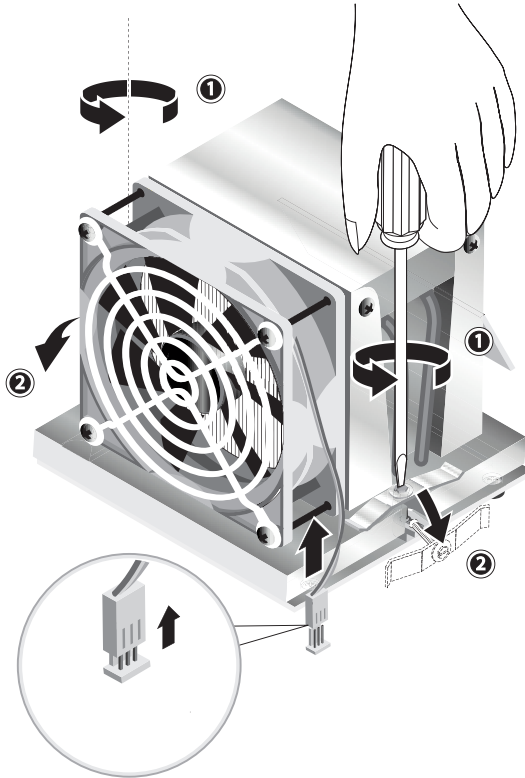
**FIGURE 4-7** CPU 0 Fan Power Connector on the Motherboard



**FIGURE 4-8** CPU 1 Fan Power Connector on the Mezzanine Card

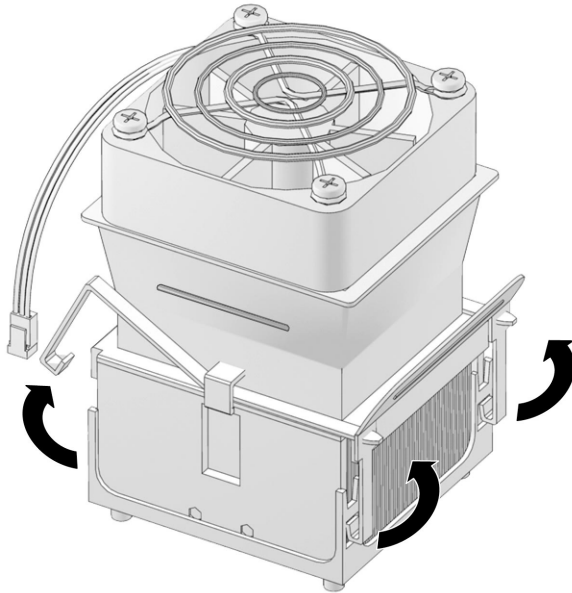


2. Choose the bullet that corresponds with the heatsink/fan assembly installed on the motherboard.
- 240-4589-01 or 240-4612-01: Loosen the two screws that hold the heatsink/fan assembly to the motherboard (see (1) on [FIGURE 4-9](#)), then pivot the retaining clips outward (2).



**FIGURE 4-9** Unfastening the Heatsink/Fan Assembly Retaining Clips (240-4589-01 or 240-4612-01)

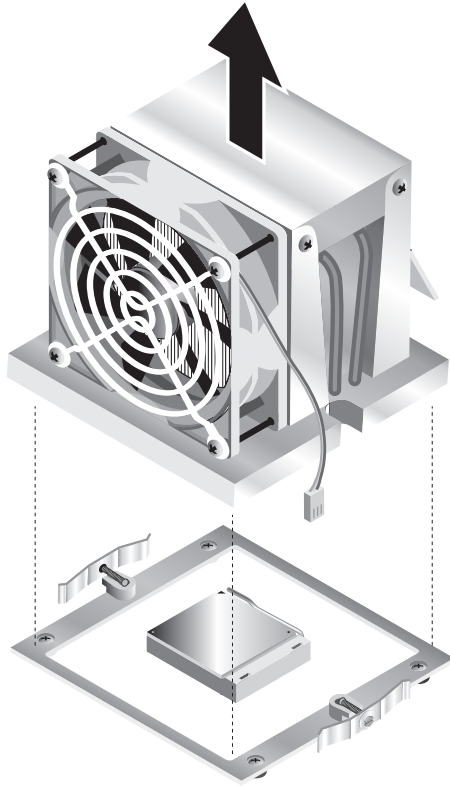
- 310-0020-01: Unlatch the retaining clips on each side of the heatsink/fan assembly (see [FIGURE 4-10](#)).



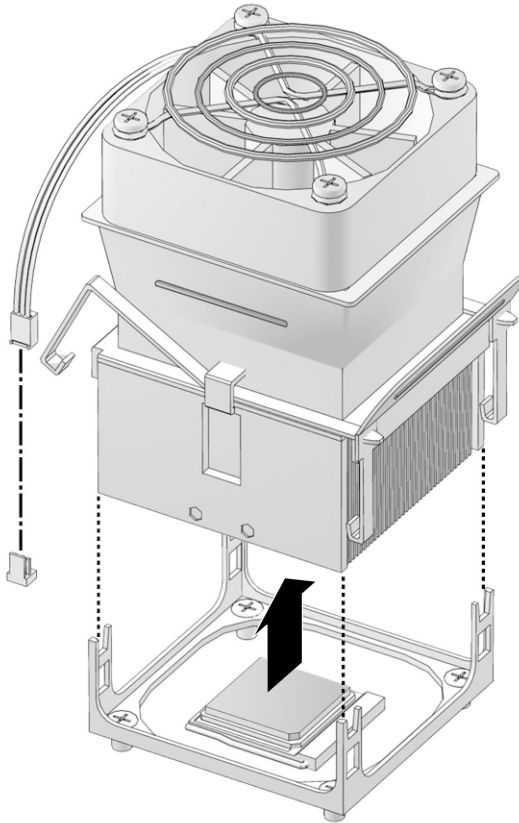
**FIGURE 4-10** Unfastening the Heatsink/Fan Assembly Retaining Clips (310-0020-01)

3. **Twist the heatsink/fan assembly to the right or the left, in order to break the seal with the thermal grease.**

4. Lift the heatsink/fan assembly straight up and withdraw it from the board (see [FIGURE 4-11](#) and [FIGURE 4-12](#)).



**FIGURE 4-11** Removing the Heatsink/Fan Assembly (240-4589-01 or 240-4612-01)



**FIGURE 4-12** Removing the Heatsink/Fan Assembly (310-0020-01)

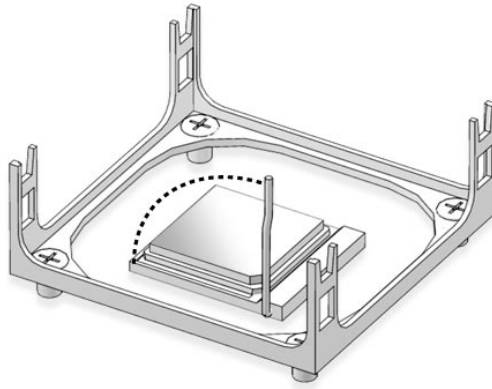
5. Place the heatsink upside down on a flat surface to prevent the thermal grease from contaminating other components.
6. Use an alcohol pad to clean the thermal grease from both the bottom of the heatsink, and the top of the CPU.

---

**Note** – Failure to clean the CPU before removing it could result in the accidental contamination of the CPU or other components.

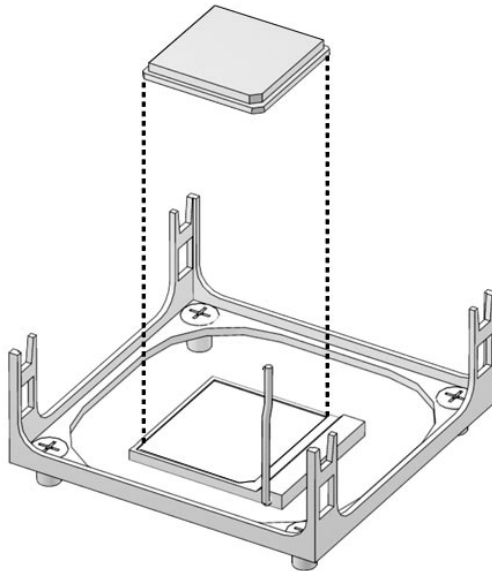
---

7. First depress, then pull, the socket retainer lever up to the fully open, perpendicular position (see [FIGURE 4-13](#)).



**FIGURE 4-13** Unlatching the CPU Socket Retaining Lever

8. Lift the CPU out of the socket, leaving the retainer lever in the open position (see [FIGURE 4-14](#)).



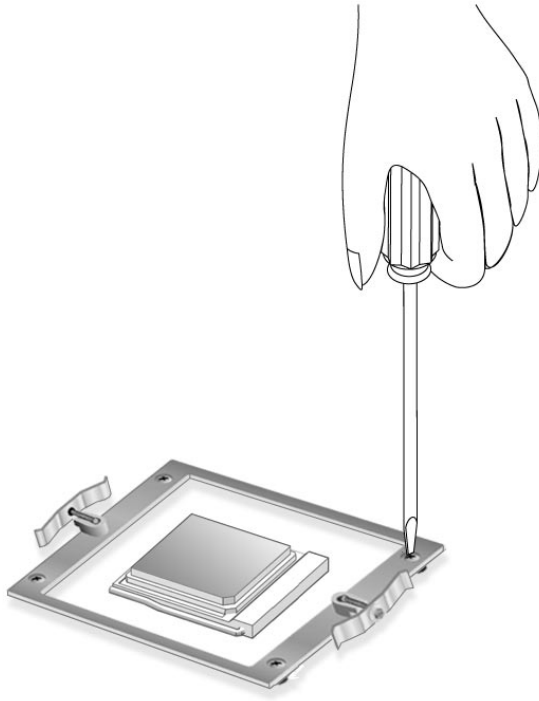
**FIGURE 4-14** Removing the CPU

**9. If you are replacing the heatsink, take the appropriate step below:**

- If you just removed heatsink/fan assembly 310-0020-01, you can proceed with [4.5.4.3“Installing a CPU and Heatsink/Fan Assembly” on page 23.](#)
- If you just removed heatsink/fan assembly 240-4589-01 or 240-4612-01, follow the instructions below:

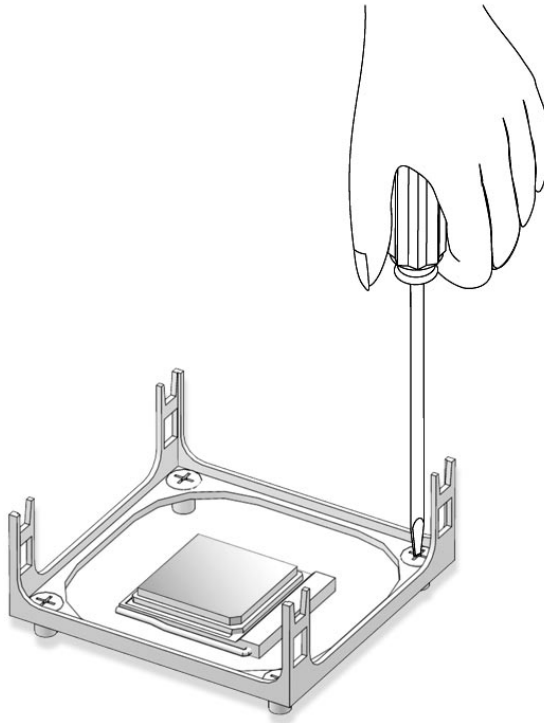
**a. Remove the 4 screws fastening the original retaining bracket to the motherboard.**

Keep the screws for installing the new retaining bracket.



**FIGURE 4-15** Removing the Original Retaining Bracket

- b. Install the new retaining bracket onto the motherboard and fasten the four screws.



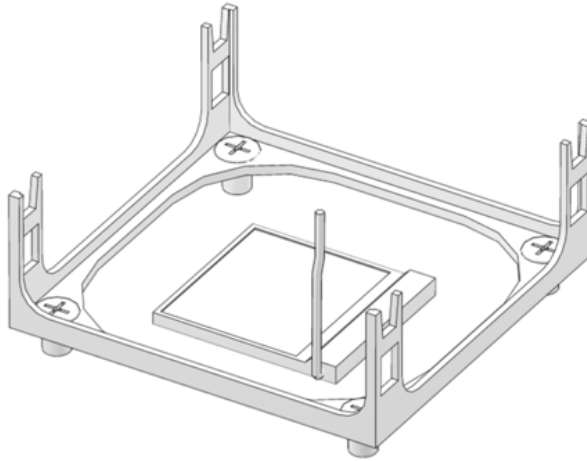
**FIGURE 4-16** Installing the New Retaining Bracket

### 4.5.4.3 Installing a CPU and Heatsink/Fan Assembly

To install a heatsink and CPU:

1. **Observe the ESD precautions and preinstallation procedures described in [Section 4.2.1, “ESD Precautions” on page 4-2.](#)**

2. Ensure that the socket retainer lever is in the fully open, upright position (see [FIGURE 4-17](#)).

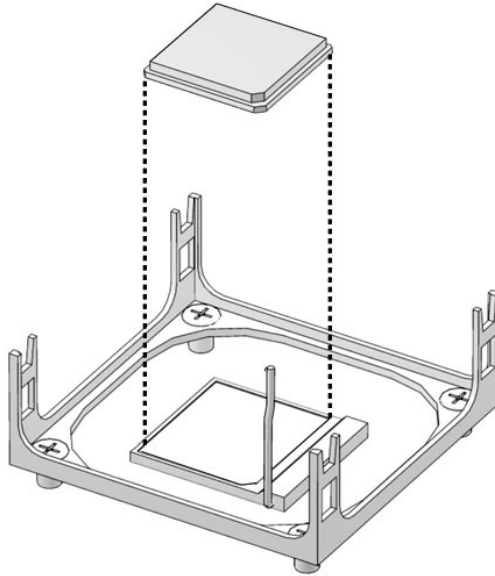


**FIGURE 4-17** Socket Retaining Lever in Upright Position

3. Align the CPU to its socket so that pin 1 of the CPU (indicated by the notched corner) is aligned with hole 1 of the socket, (indicated by the arrow in the corner of the socket).



4. Insert the CPU into the socket (see [FIGURE 4-18](#)).



**FIGURE 4-18** Installing the CPU

---

**Note** – When correctly aligned, the CPU should drop effortlessly into the socket. Do not attempt to force the CPU into the socket in order to seat it.

---

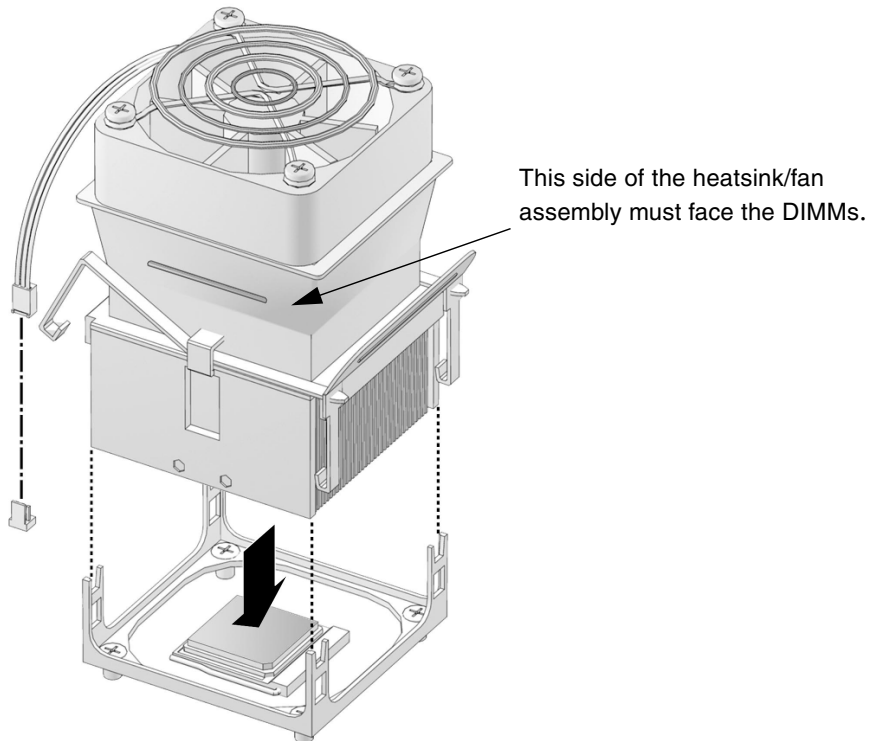
5. When the CPU is positioned in the socket, press down on the socket retainer lever to lock the CPU in place.

6. Carefully position the heatsink/fan assembly on the CPU, aligning it with the mounting posts to reduce movement after it makes initial contact with the layer of thermal grease (see [FIGURE 4-19](#)).

---

**Note** – Make sure that the side of the heatsink/fan assembly with the slit is facing the DIMMs.

---



**FIGURE 4-19** Installing the Heatsink/Fan Assembly



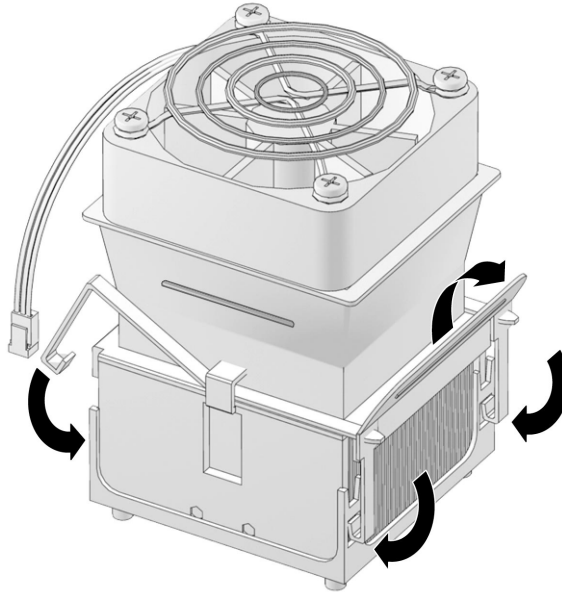
---

**Caution** – If the heatsink assembly is moved too much during its installation, the layer of thermal grease might not be distributed evenly, leading to component damage.

---

7. Connect the CPU fan cable to the connector on the motherboard (see [FIGURE 4-19](#)).

8. Fasten the latches on one side of the heatsink/fan assembly, then latch the other side (see [FIGURE 4-20](#)).



**FIGURE 4-20** Securing the Heatsink/Fan Assembly

## 4.5.5 Replacing or Adding DIMMs

This section contains instructions for removing and installing a dual in-line memory module (DIMM). See [FIGURE 4-21](#) when performing this procedure.

---

**Note** – Except for the single-DIMM configuration, memory modules must be installed and removed in pairs, observing sequential slot positions. Three-DIMM configurations are not supported.

For CPU 0, populate DIMM sockets 3 and 4 first, followed by sockets 1 and 2. For CPU 1, populate DIMM sockets 7 and 8 first, followed by sockets 5 and 6.

---

---

**Note** – Before removing any DIMMs from the motherboard, create a backup file to preserve any important data.

---

### 4.5.5.1 Replacing DIMMs

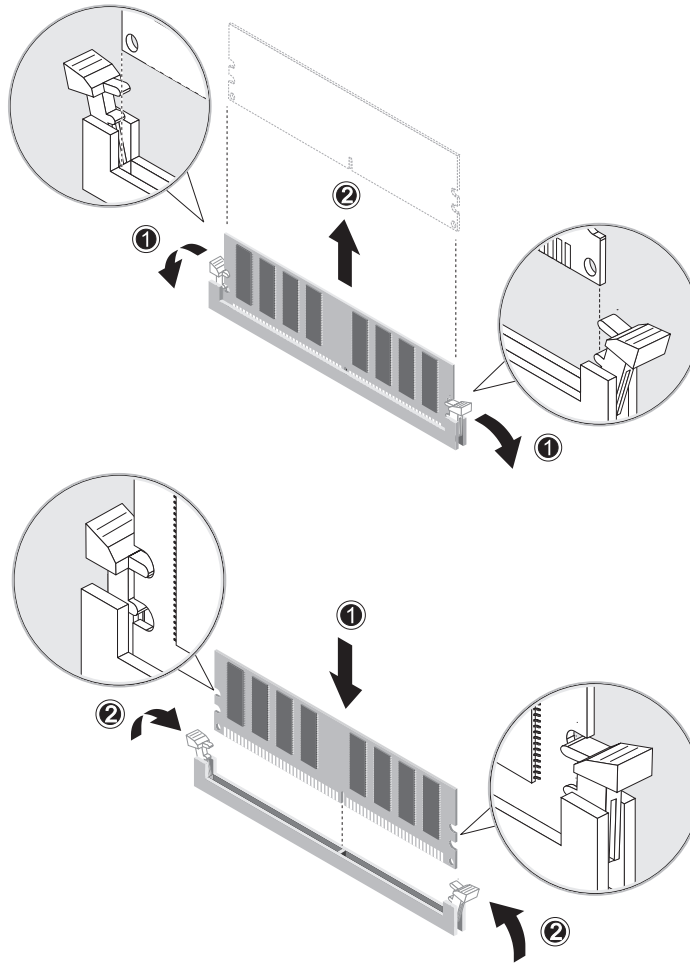
To remove a DIMM:

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel.
3. Gently lay the system on its right side on a stable, non-slip surface.
4. Identify the location from which you will remove a DIMM.
5. Remove the DIMM by pressing down on the ejector bars at both ends of the DIMM socket.

---

**Note** – Place your forefingers on the top of the DIMM *before* pressing down on the ejector bars, to gently disengage the DIMM from the socket.

---



**FIGURE 4-21** Removing and Installing a DIMM

Installation is the reverse of this procedure.

---

**Note** – The DIMM socket is slotted to ensure proper installation.

---

## 4.5.5.2 Adding 2 GB DIMMs

If you are installing a 2 GB DIMM into a workstation in which a 2 GB DIMM has not previously been installed, you need to make sure that the workstation is running BIOS version R1B0S4 or later before installing the DIMM.

---

**Note** – If all 4 DIMM slots are populated with 2G DIMMS, the system will automatically decrease the memory speed to DDR333.

---

To add a 2 GB DIMM:

1. **Determine your BIOS version.**
  - a. **Reboot your workstation.**

Press the F2 key while the workstation is booting up to enter the BIOS setup screen
  - b. **Select the product information option.**
    - If the workstation has BIOS R1B0S4 or later, you do not need to update your BIOS.
    - If the workstation has a BIOS version earlier than R1B0S4, continue the following steps to update the BIOS.
2. **Do one of the following:**
  - If you have the Sun Java Workstation W1100z and W2100z Supplemental CD V1.1 or later, insert the CD into the workstation CD-ROM drive.
  - If you do not have the Sun Java Workstation W1100z and W2100z Supplemental CD V1.1 or later:
    - a. **Download the ISO of the Supplemental CD V1.1 from the following web site:**  
<http://www.sun.com/desktop/workstation/w1100z/downloads.html>
    - b. **Copy the ISO onto a CD.**
    - c. **Insert the CD into the Sun Java Workstation W1100z or W2100z.**
3. **Reboot the workstation.**
4. **When the Supplemental CD main menu is displayed, select option 2 to update the BIOS.**
5. **Follow directions on the screen.**
6. **Install the DIMMs as instructed in [Section 4.5.5.1, “Replacing DIMMs” on page 4-28.](#)**

### 4.5.5.3 Reconfiguring the System Memory

The system automatically detects the amount of memory installed. Run the BIOS setup to view the new value for total system memory and make a note of it.

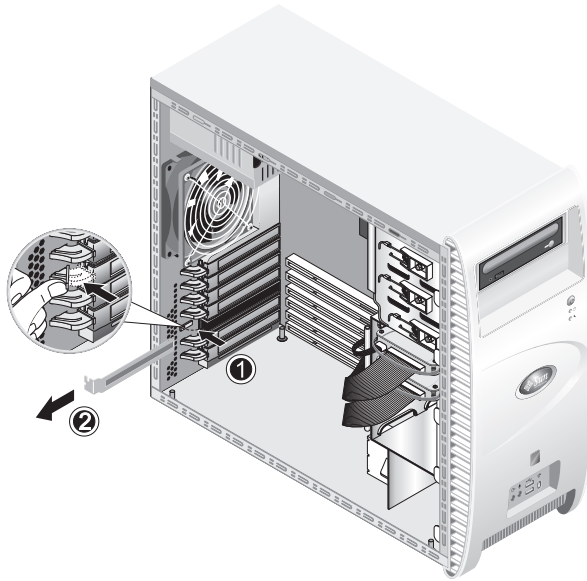
## 4.5.6 Installing a PCI or AGP Card

This procedure describes how to install a typical PCI card (including the host bus adapter) or AGP card. PCI and AGP cards may vary in the way in which they are installed in the system. For example: PCI cards may be either full-length cards or half-length cards; AGP cards are secured in the AGP card slot with a latch. Visually inspect each card to determine its mounting requirements before beginning this procedure.

To install a PCI or AGP card:

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel.
3. Gently lay the system on its right side on a stable, non-slip surface.
4. Refer to the Service Label, attached to the inside of the access panel, to choose an empty card slot that is compatible with the card that you are installing.
5. Working from inside the chassis, compress the blue retention clip (securing the selected slot cover) until it passes through the cutout in the rear panel (see (1) on [FIGURE 4-22](#)). Then pivot the clip outwards.
6. Pull out the slot cover (see (2) on [FIGURE 4-22](#)).

Keep it for reassembly later.



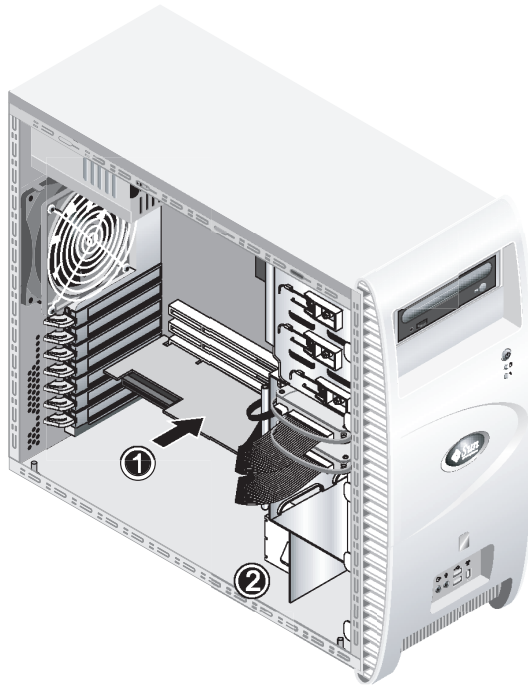
**FIGURE 4-22** Removing a PCI Card Slot Cover

- 7. Remove the PCI or AGP card from its protective packaging. If necessary, lay the card on an anti-static surface until you are ready to install it.**



**8. Refer to the bullet below that corresponds to the card you are installing:**

- *For a PCI card:*
  - a. Position the card over the selected slot (see (1) on [FIGURE 4-23](#)). If you are installing a full-length card, slide the forward edge of the card into one of the indentations in the card guide, located immediately below the drive cage (see (2) on [FIGURE 4-23](#)).
  - b. Press down on the card until it is completely seated in the slot.



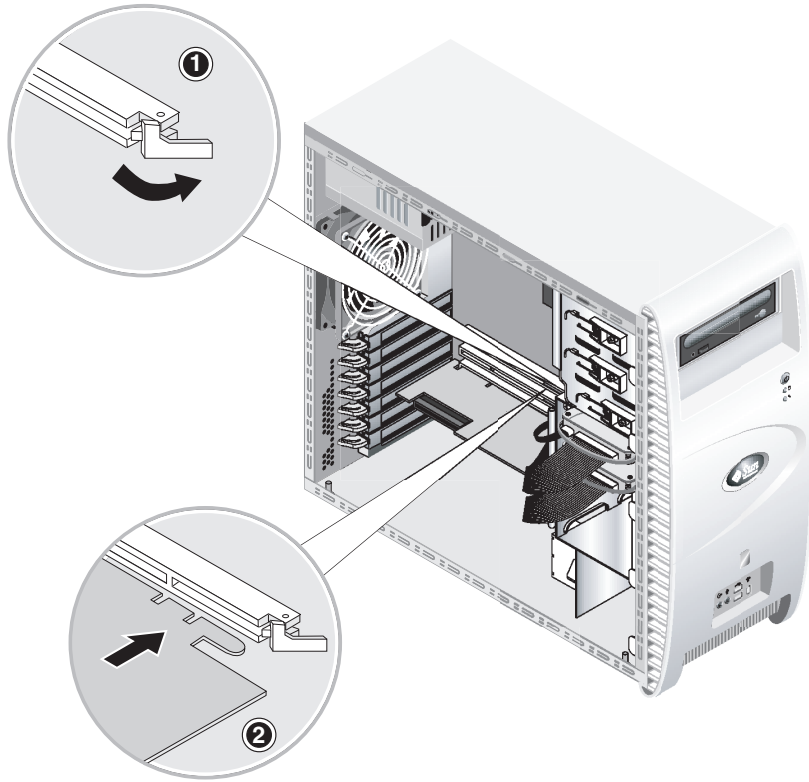
**FIGURE 4-23** Installing the PCI Card

- *For an AGP card:*
  - a. Make sure that the card latch, at the forward end of the AGP slot, is completely opened (see (1) on [FIGURE 4-24](#)).
  - b. Position the card in the selected slot (see (2) on [FIGURE 4-24](#)). Ensure that the notch, on the bottom right corner of the card, engages the latch.
  - c. Press down on the card until it is completely seated in the slot.
  - d. Pivot the latch up and towards the rear of the chassis to secure the card in place.

---

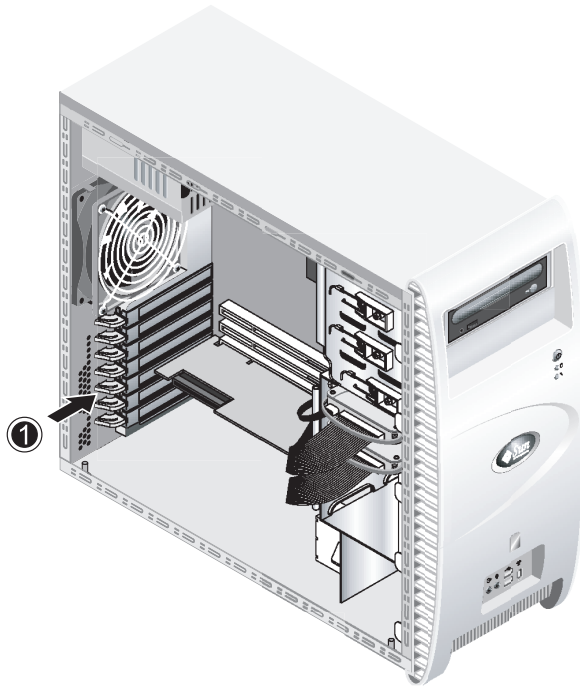
**Note** – If the latch cannot be engaged with a minimum of force, the card is not correctly seated. Remove the card, reinsert it, and attempt to engage the latch again.

---



**FIGURE 4-24** Installing the AGP Card

9. Rotate the retention clip back into the chassis until the clip snaps into place (refer to (1) on [FIGURE 4-25](#)).



**FIGURE 4-25** Securing the PCI or AGP Card

10. **Connect any necessary adapters or cables to the card.**

Please note the following guidelines for connecting power cables to the AGP cards:

- If are installing an NVIDIA FX1100, FX3000, or FX4000 AGP card, you will need to install one end of the included supplemental dual power cable (y splitter) to the power connector on the card and the other end to the power supply cable.
- For an FX4000 card, the dual end of the supplemental power cable connects to the two power connectors on the video card.

- If you have a system that contains four hard disk drives and an NVIDIA FX1100/3000/4000 card, connect the hard disk drives and AGP card to the power supply connectors as follows:

**TABLE 4-1** Power Supply Connections

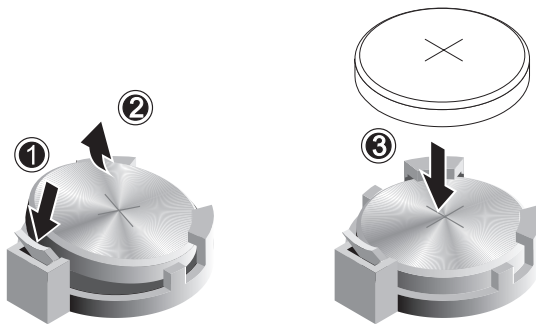
<b>Power Supply Connector</b>	<b>Component Power Connector</b>
PB4 connector	HDD1 in Slot1 (Channel A)
PB3 connector	HDD2 in Slot2 (Channel A)
PB1 connector	HDD3 in Slot4 (Channel B)
PC3 connector	HDD4 in Slot5 (Channel B)
PC2 connector	FX1100/3000/4000 card power cable

Removal is the reverse of this procedure.

## 4.5.7 Replacing the System Battery

To remove and install the battery (see [FIGURE 4-26](#)):

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel.
3. Gently lay the system on its right side on a stable, non-slip surface.
4. If a mezzanine card is present, remove it and/or the PCI card in Slot 1 to gain access to the battery socket.
5. Insert a small flathead screwdriver between the battery and spring latch to dislodge the battery from its socket (1).
6. Lift up the battery to remove it (2).
7. Insert a new battery with the positive sign (+) facing up, and ensure that it is seated completely (3).

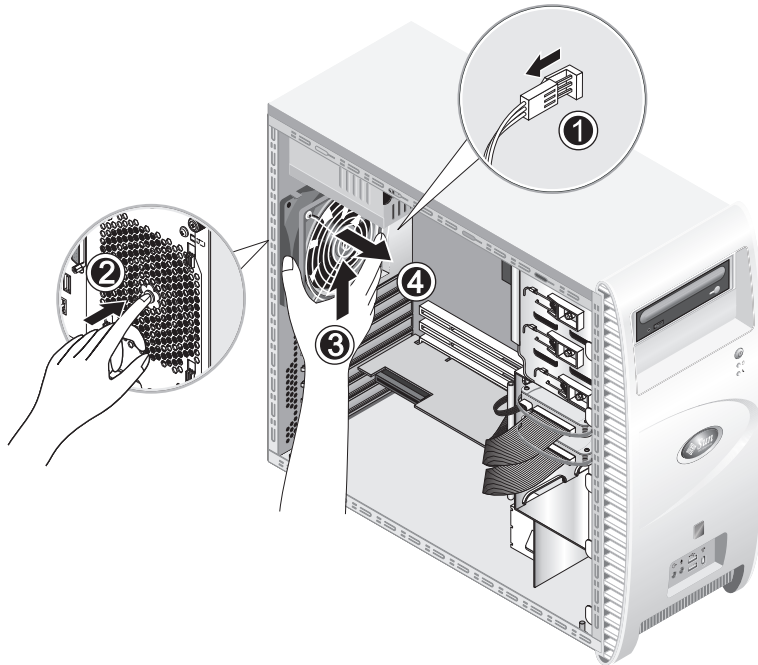


**FIGURE 4-26** Removing and Installing the Battery

## 4.5.8 Replacing the System Fan

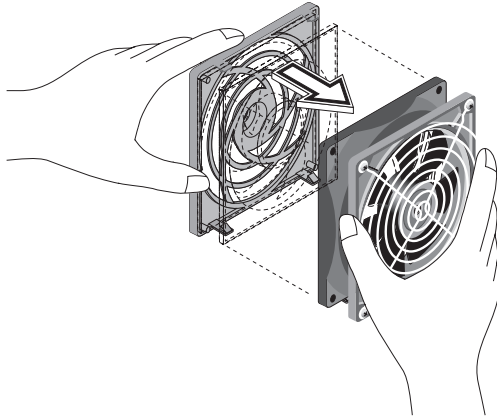
To remove the system fan (see [FIGURE 4-27](#)):

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel.
3. Gently lay the system on its right side on a stable, non-slip surface.
4. Disconnect the system fan's power connector from the motherboard (1).
5. Working from outside the rear of the chassis, press the spring-loaded button, at the center of the system fan (2).
6. While holding the button in, slide the fan up (3) and withdraw it from the mounting slots (4).



**FIGURE 4-27** Removing the System Fan From the System

7. Detach the fan from its frame by unclipping the four tabs on the frame before pulling the fan away.



**FIGURE 4-28** Removing the System Fan from the System Fan Frame

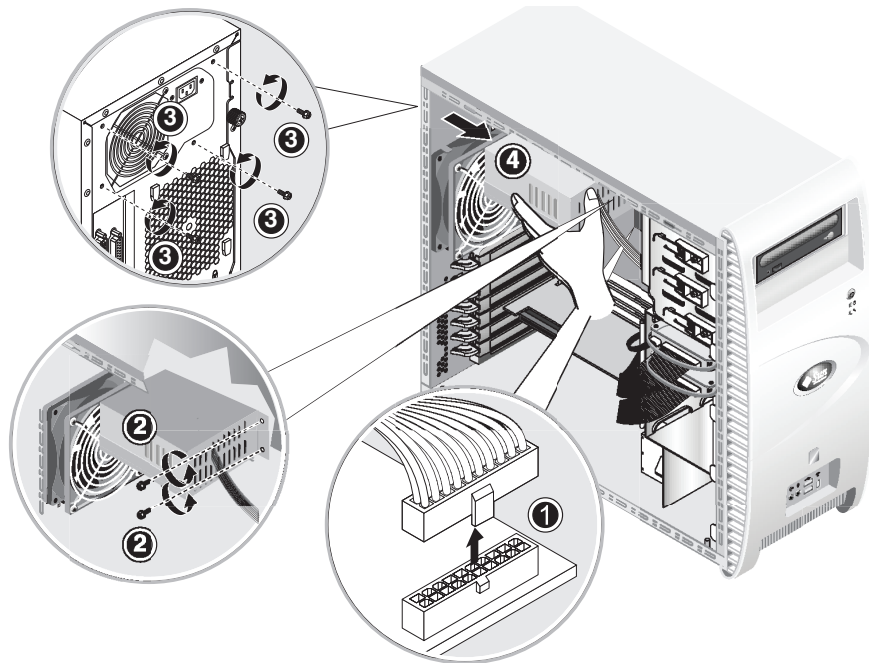
Installation is the reverse of this procedure.



## 4.5.9 Replacing the Power Supply

To remove the power supply (see [FIGURE 4-29](#)):

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel.
3. Gently lay the system on its right side on a stable, non-slip surface.
4. Unfasten the connectors from the motherboard and release the cable management straps (1).
5. Unfasten the 4-pin power connectors attached to the DVD drive and any other I/O devices present.
6. Unfasten the two screws that attach the rear of the power supply to the right side of the chassis (2).
7. Working from outside the rear of the chassis, unfasten the four mounting screws (3) and withdraw the power supply through the interior of the system chassis (4).



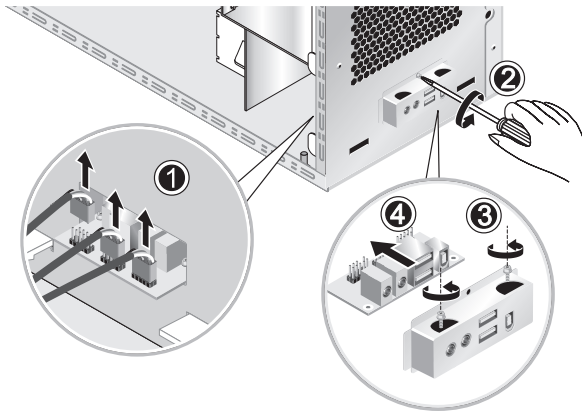
**FIGURE 4-29** Removing the Power Supply

Installation is the reverse of this procedure.

## 4.5.10 Replacing the USB Audio Card Assembly

To remove the USB audio card assembly (see [FIGURE 4-30](#)):

1. Turn off the system and all of the peripherals connected to it.
2. Remove the left-side access panel and the front bezel.
3. Place the system unit on a flat, stable surface.
4. Disconnect the audio, USB, and IEEE 1394 cables from the audio board (1).
5. Working from the front of the chassis, unfasten the single screw securing the USB audio card assembly to the system's front panel (2).
6. Gently lift the audio assembly up and slightly away from the front panel.
7. Remove the two screws that hold the audio board to the metal frame (3).
8. Withdraw the audio card from the metal frame (4).



**FIGURE 4-30** Removing the USB Audio Card

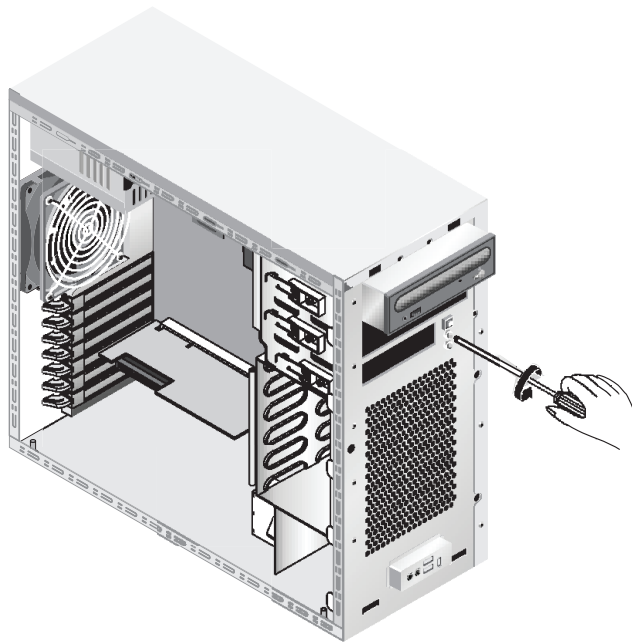
Installation is the reverse of this procedure.

## 4.5.11 Replacing the Operator's Panel

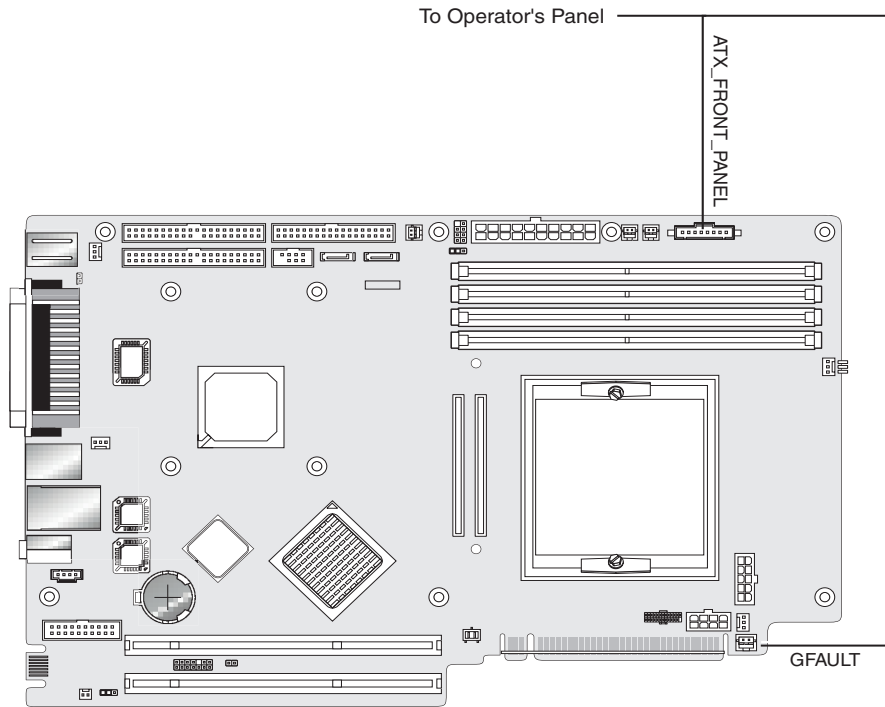
To remove the operator's panel:

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel and the front bezel.
3. Gently lay the system on its right side on a stable, non-slip surface.
4. Working from the front of the chassis, unfasten the single screw securing the operator's panel to the front of the chassis (see [FIGURE 4-31](#)).
5. Working from inside the chassis, grasp the operator panel cables and gently pull the panel into the chassis.
6. Disconnect the two connectors attaching the operator's panel to the motherboard and withdraw the operator's panel from the chassis (see [FIGURE 4-32](#)).

Installation is the reverse of this procedure.



**FIGURE 4-31** Unfastening the Operator's Panel



**FIGURE 4-32** Uncablng the Operator's Panel

## 4.5.12 Replacing System Cables

The following list of system cables have a connector at each end, and so may be removed or installed by the customer. All other cables are permanently attached to a system component at one end and must be removed or replaced along with the component.

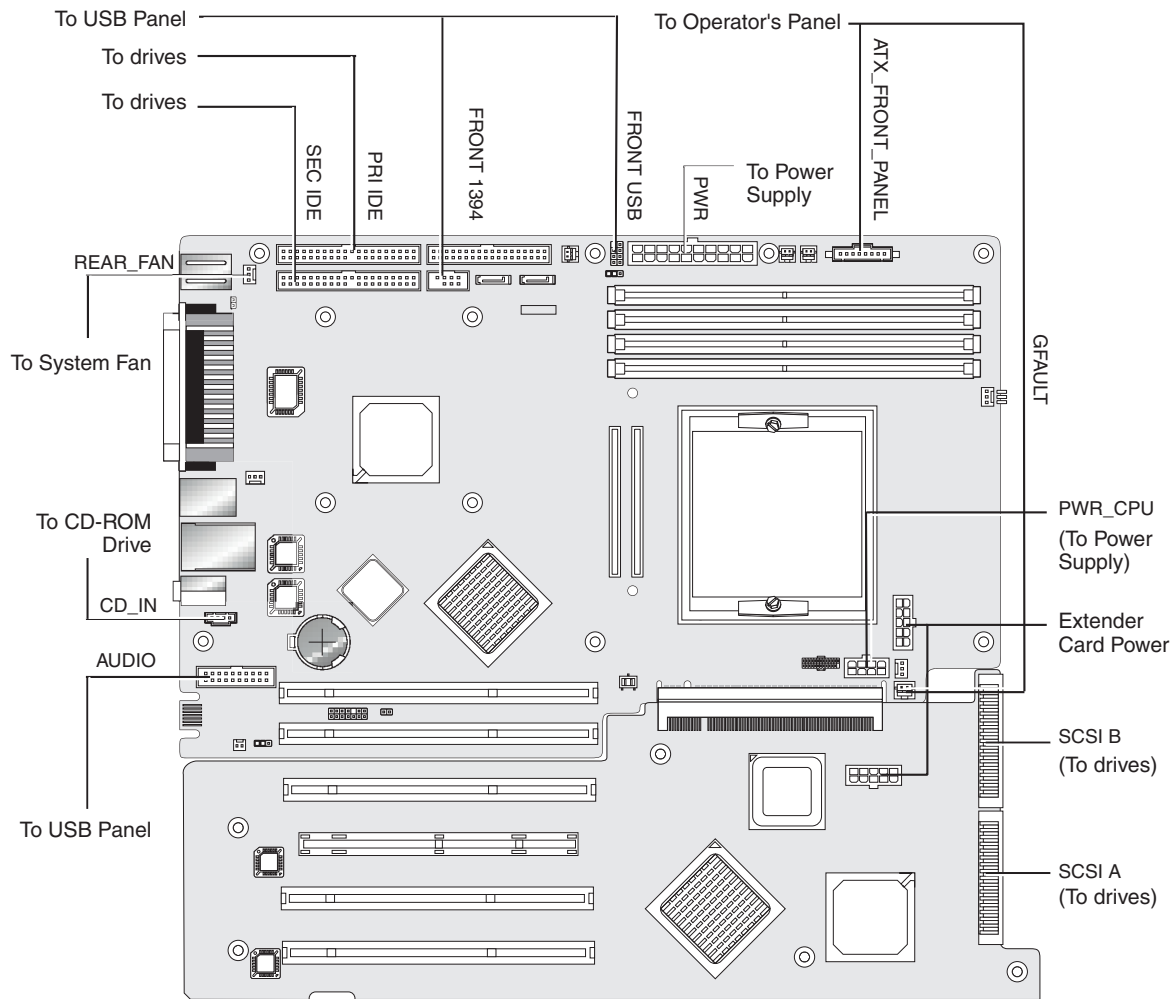
- Motherboard-to-extender card power cable
- Front USP audio card cables:
  - Audio cable
  - USB cable
  - IEEE 1394 cable
- IDE cable (DVD drive)
- IDE cable (Hard Disk Drive)
- SCSI cable(s)
- CD\_IN cable from DVD drive

Each cable connector on the motherboard and extender card is labeled to help you identify the cable to which it should be connected.

To remove and install system cables:

- 1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.**
- 2. Remove the left-side access panel.**
- 3. Gently lay the system on its right side on a stable, non-slip surface.**
- 4. Ensure that all cable routing is correct, and that all of the cable connectors are properly seated, before re-installing the left-side access panel.**

Use [FIGURE 4-33](#) to identify the cable to be replaced.

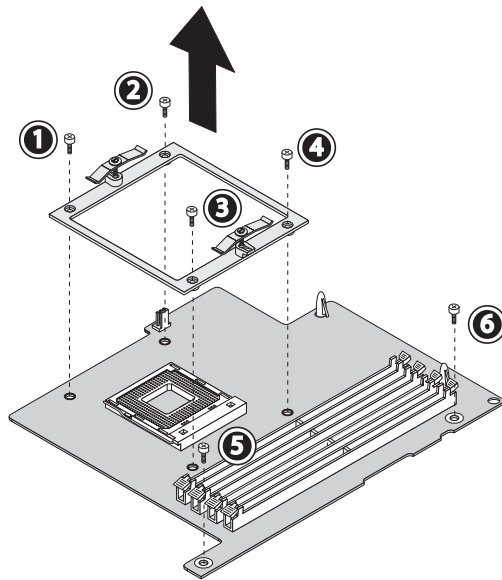


**FIGURE 4-33** System Cables

## 4.5.13 Replacing the Mezzanine Card

To remove the mezzanine card:

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel.
3. Gently lay the system on its right side on a stable, non-slip surface.
4. Remove the heatsink/fan assembly (refer to [Section 4.5.4, “Replacing a CPU” on page 4-15](#)) in order to expose four of the mezzanine card’s mounting screws.
5. Unfasten the six screws securing the mezzanine card to the motherboard ([FIGURE 4-34](#)).



**FIGURE 4-34** Removing the Mezzanine Card Mounting Screws

6. Use a pair of needle-nose pliers to push in the latch on each of the two white standoffs holding the card to the motherboard (see [FIGURE 4-35](#)).

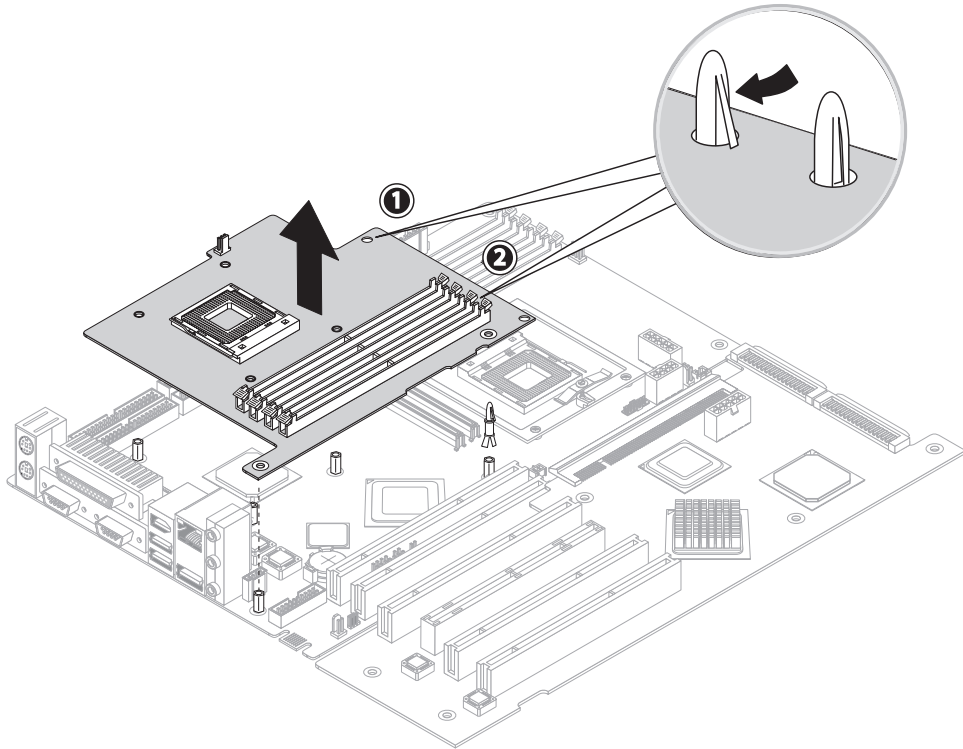


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**Caution** – When you push in the mezzanine card standoffs, make sure that you do not damage the capacitors that are located near the standoffs.

---

7. Lift the mezzanine card straight up to release it from the two connectors on the motherboard.



**FIGURE 4-35** Releasing the Standoffs and Removing the Mezzanine Card

8. Remove the CPU (refer to [Section 4.5.4, “Replacing a CPU”](#) on page 4-15).
9. Remove the DIMMs (refer to [Section FIGURE 4-21, “Removing and Installing a DIMM”](#) on page 4-29).

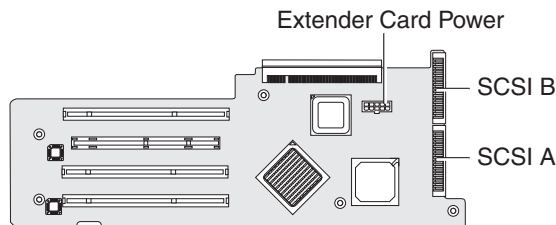
Installation is the reverse of this procedure



## 4.5.14 Replacing the Extender Card

This procedure describes how to remove the Extender card.

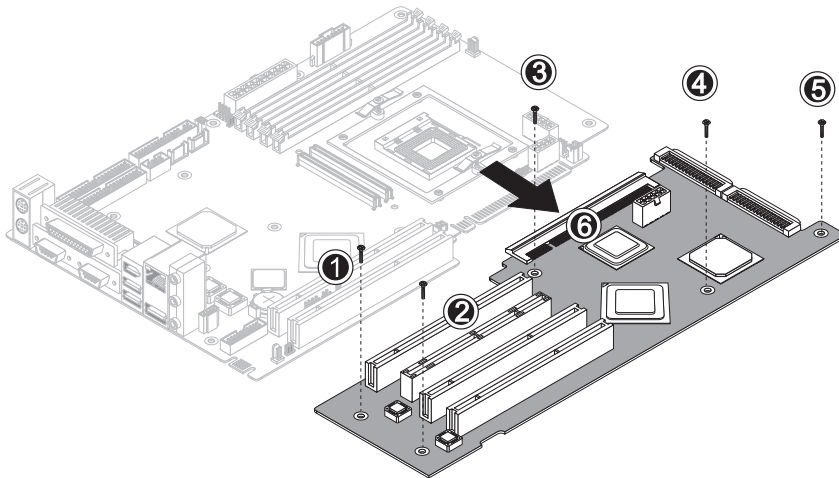
1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel.
3. Gently lay the system on its right side on a stable, nonslip surface.
4. Remove any PCI Cards installed on the extender card (refer to [Section 4.5.6, “Installing a PCI or AGP Card”](#) on page 4-31).
5. Pivot the front card guide (located below the drive cage) up and towards the front of the chassis.
6. Disconnect the SCSI data cable and the power connector from the extender card (see [FIGURE 4-36](#)).



**FIGURE 4-36** Unfastening the Extender Card Connectors

7. Unfasten the audio cable (coming from the USB panel at the front of the chassis) from the FRONT\_AUDIO connector on the motherboard.
8. Release the audio cable from the cable clip, located at the bottom left corner of the chassis, and lay the cable over the front of the chassis.

9. Unfasten the 5 screws securing the extender card to the system chassis (see (1) through (5) on [FIGURE 4-37](#)).



**FIGURE 4-37** Unfastening the Securing Screws and Removing the Extender Card

10. Gently lift the side of the extender card, that is next to the bottom of the chassis, approximately 1 inch.
11. Pull the extender card away from the motherboard to disengage the connector (see (6) on [FIGURE 4-37](#)). Withdraw the extender card from the system chassis and place the card on a suitable antistatic surface.

Installation is the reverse of this procedure.

## 4.5.15 Replacing the Motherboard

To remove the motherboard:

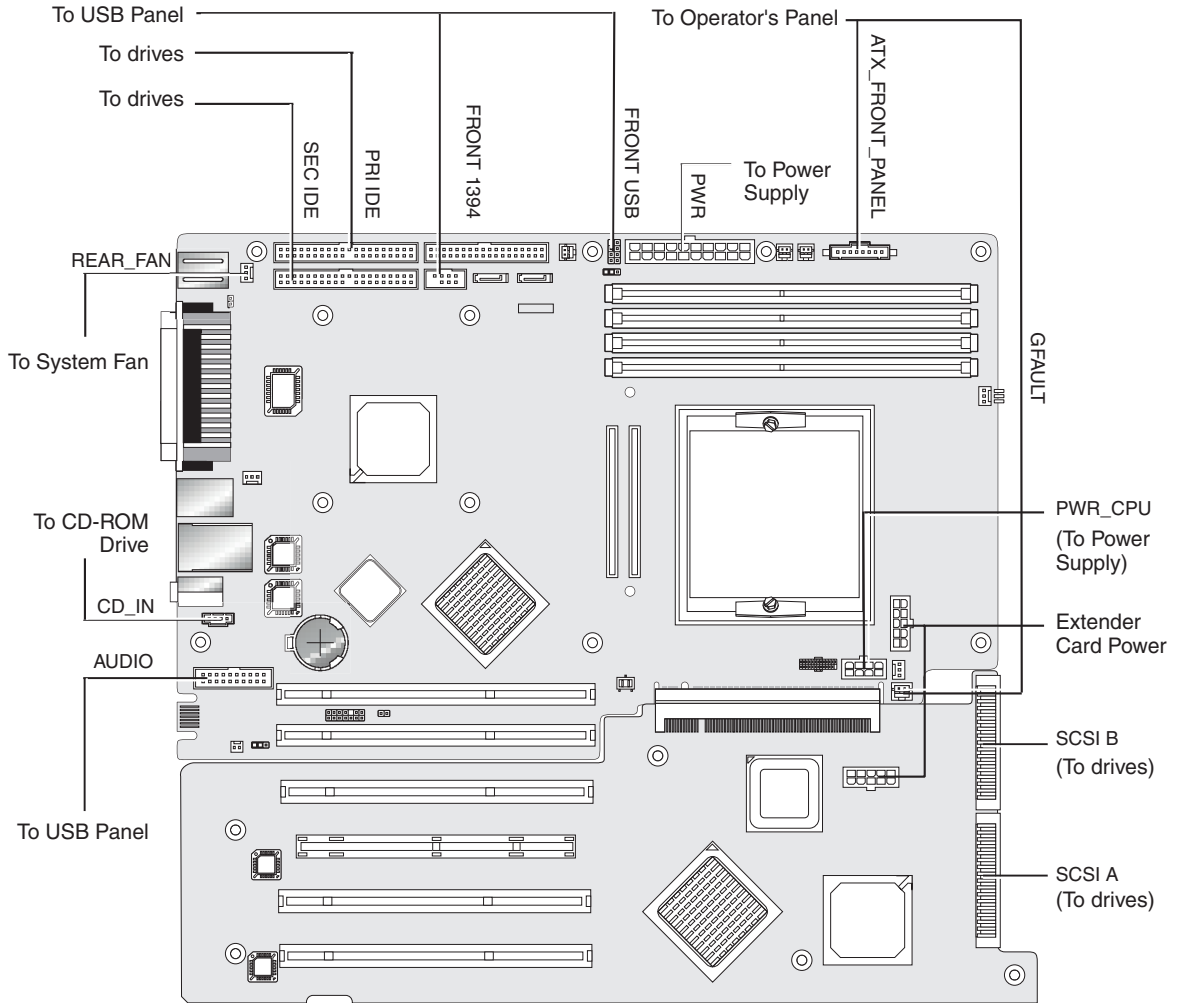
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**Note** – The motherboard is not a CRU and should be replaced only by trained field service technicians.

---

1. Turn off the system and all of the peripherals connected to it, then unplug the AC power cord from the system.
2. Remove the left-side access panel.
3. Gently lay the system on its right side on a stable, non-slip surface.

4. Remove any PCI cards installed on either the extender card or the motherboard (see [Section 4.5.6, "Installing a PCI or AGP Card" on page 4-31](#)).
5. Remove the extender card, as described in [Section 4.5.14, "Replacing the Extender Card" on page 4-49](#).
6. Remove the mezzanine card (if present) as described in [Section 4.5.13, "Replacing the Mezzanine Card" on page 4-47](#).
7. Disconnect all cables attached to the motherboard (see [FIGURE 4-38](#)).



**FIGURE 4-38** Uncabling the Motherboard

8. Unfasten the motherboard from the chassis.

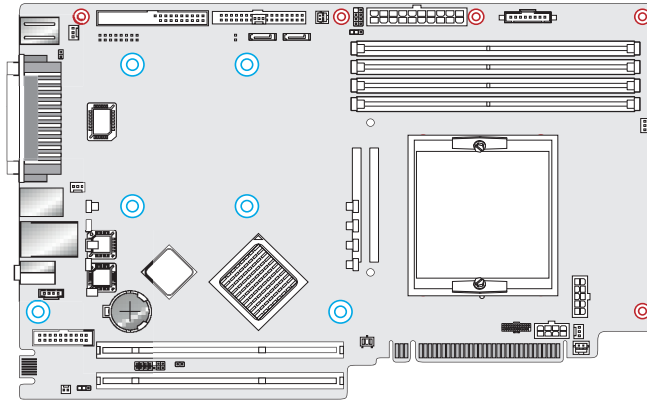
- For single-processor systems, remove 11 Philips head screws (see [FIGURE 4-39](#)).
- For dual-processor systems with the mezzanine card only:
  - a. Use a hex-nut driver to remove 6 hex-head standoffs.
  - b. Remove five Philips head screws.
  - c. Use needle-nosed pliers to release the two plastic standoffs.

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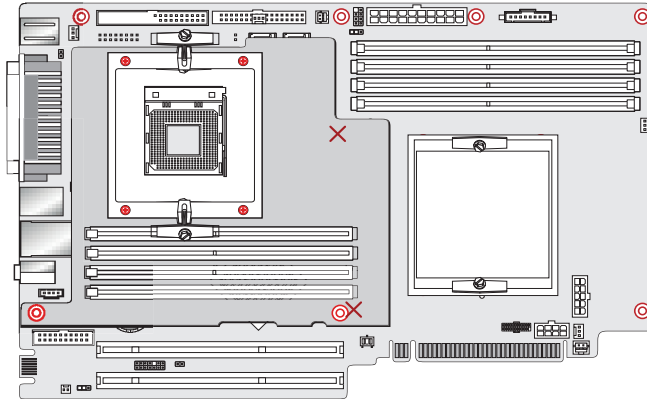
**Note** – Do not remove the four screws that secure the CPU 0 heatsink/fan assembly mounting to the motherboard.

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## 1P System



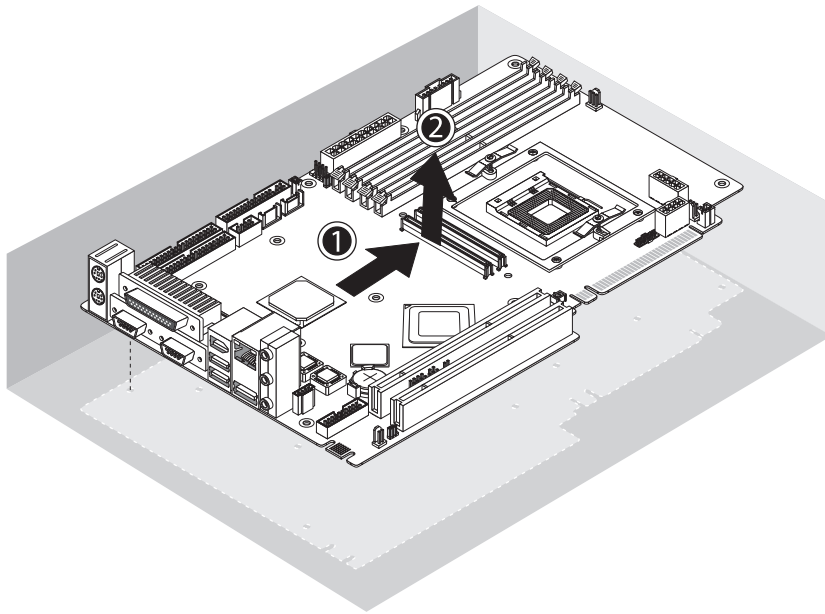
## 2P System



- ⊙ Screws used on both 1P and 2P systems.
- ⊙ Hex head standoffs used in 2P systems (replaces screws used on 1P systems).
- ✗ Plastic standoffs used in 2P systems (not present on 1P systems).

**FIGURE 4-39** Unfastening the Motherboard From the Chassis

9. Slide the motherboard towards the front of the chassis (see (1) on [FIGURE 4-40](#)) and then lift it up to withdraw it (2).



**FIGURE 4-40** Removing the Motherboard From the Chassis

Refer to the following sections to remove and replace the CPU and memory:

- [Section 4.5.4, “Replacing a CPU” on page 4-15](#)
- [Section 4.5.5, “Replacing or Adding DIMMs” on page 4-28](#)

Installation is the reverse of this procedure.



---

**Caution** – Observe proper ESD precautions when handling the new motherboard.

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# System Specifications

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To obtain maximum reliability and performance, install your workstation into a proper environment and ensure correct configuration as discussed in this chapter.

---

## A.1 Physical Specifications

[TABLE A-1](#) lists the physical specifications for the Sun Java Workstation W1100z and W2100z.

**TABLE A-1** Sun Java Workstation W1100z and W2100z Physical Specifications

Specification	British	Metric
Width	7.88 in.	200 mm
Depth	21.92 in.	557 mm
Height	19.18 in.	462 mm
Weight (max.)	41.89 lbs	19 kg

## A.2 Power Specifications

The maximum continuous power for the Sun Java Workstation W1100z and W2100z is 530 W.

Additional power specifications for the workstation are shown in [TABLE A-2](#), [TABLE A-3](#) and [TABLE A-4](#).

**TABLE A-2** Input Voltage Range

Minimum	Minimum	Nominal	Maximum	Units
Range 1	90	115	132	Vrms
Range 2	180	230	264	Vrms

**TABLE A-3** Input Frequency Range

Minimum	Minimum	Nominal	Maximum	Units
Range 1	57	60	63	Hz
Range 2	47	50	53	Hz

**TABLE A-4** Input Current

Input Voltage	Maximum Input Current	Maximum Inrush Current
Range 1	10 A	50 A <sub>peak</sub>
Range 2	5 A	100 A <sub>peak</sub>



## A.3 Environmental Specifications

Environmental specifications for the Sun Java Workstation W1100z and W2100z are shown in [TABLE A-5](#).

**TABLE A-5** Sun Java Workstation W1100z and W2100z Environmental Specifications

Specification	State	British	Metric
Humidity	Operating	10%-90% RH non-condensing, 80.6° F max wet bulb	10%-90% RH non-condensing, 27° C max wet bulb
	Nonoperating	93% RH, non-condensing, 100.4° F max wet bulb	93% RH, non-condensing, 38° C max wet bulb
Vibration	Operating	0.20 G in all axes, 5-500 Hz sine	
	Nonoperating	1.0 G in all axes, 5-500 Hz sine	
Shock	Operating	5 G, 11 msec. half-sine	
	Non-operating		
Temperature	Operating	41° F to 95° F	5° C to 35° C
	Non-operating	-40° F to 149° F	-40° C to 65° C
Maximum operating temperature derating		-1.8° F for every 985 ft. in altitude	-1° C for every 300 m in altitude
Altitude	Operating	max 9,843 ft	max 3000 m
	Non-operating	max 39,370 ft	max 12,000 m

